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PLANTAE PAPUANAE ARCHBOLDIANAE, XVI*

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With eleven text-figures

THE FOLLOWING genera are considered in this article: *Urophyllum*, *Pachystylus*, *Canthium*, *Antirhea*, *Timonius*, *Mastixiodendron*, *Coffea*, *Ixora*, *Versteegia*, *Coprosma*, *Coelospermum*, *Morinda*, and *Galium*. We still have *Psychotria* and its closely related genera to be included in another paper, and that, we hope, will complete the Rubiaceae until such time as certain specialists can give the collections their attention.

RUBIACEAE (in part)

Urophyllum Wallich

Urophyllum umbelliferum Val. Nova Guin. Bot. 14: 262, *t.* 29A. 1925.

BRITISH NEW GUINEA: Fly River, 528 mile Camp, *Brass* 6646, May 1936, alt. 80 m., plentiful in undergrowth on ridges (tree 4 m. high; flowers green; ripe fruit black, fleshy, about 1 cm. long).

Described from Netherlands New Guinea. This collection is not so pubescent as the original, and the petioles are slightly longer than those shown in the plate, yet these are only minor variations. The calyx-lobes vary in length, being 2–4 mm.; in the open flower the corolla-tube is 4 mm. long and practically glabrous, and the lobes are 3–3.5 mm. long and pilose on the outside.

Pachystylus K. Schumann

Pachystylus Guelcherianus K. Schum. in Schumann & Hollrung, Fl. Kaiser Wilhelms Land 133. 1889; Schumann & Lauterb. Fl. Deutsch. Schutzgeb. Südsee 574. 1900. *Tarenna Guelcheriana* (K. Schum.) Val. Bot. Jahrb. 60: 85. 1925.

NETHERLANDS NEW GUINEA: Bernhard Camp, Idenburg River, *Brass* 13886, Apr. 1939, alt. 120 m., rain-forest of lower mountain slopes (undergrowth tree 2.5 m. high). BRITISH NEW GUINEA: Oroville Camp, Fly River, *Brass* 7401, Aug. 1936, plentiful in rain-forest undergrowth (tree 2–3 m. high; flowers cream-colored).

Described from Northeast New Guinea, and previously reported from

* Botanical Results of the Richard Archbold Expeditions. See Jour. Arnold Arb. 26: 1–36. 1945.

Netherlands New Guinea. Although the genus was reduced to *Tarennia* Gaertner by Valetton, Bremekamp believes it should be maintained as a separate genus, and from our little available material we agree with his point of view.

Canthium Lamarck

Canthium suborbiculare (White) comb. nov.

Plectronia suborbicularis White, Proc. Linn. Soc. N. S. Wales 51: 296, t. 17. 1926, Jour. Arnold Arb. 10: 268. 1929.

Known only from Papua.

Canthium cymigerum (Val.) B. L. Burtt, Kew Bull. 1936: 463. 1936.

Plectronia cymigera Val. Bot. Jahrb. 61: 54. 1927.

NORTHEAST NEW GUINEA: Maboro, *Schlechter* 19513, May 20, 1909, in forest. SOLOMON ISLANDS: Bougainville: Kugimaru, Buin, *Kajewski* 1805, June 1930, alt. 150 m., rain-forest (tree up to 20 m. high; leaves dark glossy green; fruit 9 mm. long, 1.2 cm. broad, 6 mm. thick); Koniguru, Buin, *Kajewski* 2111, Aug. 1930, alt. 900 m., rain-forest (tree up to 10 m. high; fruit 6 mm. long, 1 cm. broad); Ysabel: Tasia, *Brass* 3286, Dec. 1932, coastal rain-forests (small tree with drooping branches; leaves shining, the lower surface very pale; flowers white).

In the original publication of this species the type-number is given as 17513, so that either the number on our duplicate was copied wrong or there was an error in publication. It does not seem possible that both Schlechter's numbers could have been collected in the same place in the same month, unless an exceptionally large collection was made. There are two unbroken leaf-tips in the Schlechter specimen cited which tend to be broadly and obtusely acuminate. In the Solomon Islands material the leaves are ovate-elliptic, up to 10 mm. broad, more abruptly rounded at the base, and rather abruptly obtusely acuminate.

Canthium odoratum (Forst. f.) Seem. Fl. Vit. 132. 1866.

Coffea odorata Forst. f. Prodr. 16(no. 94). 1786.

BRITISH NEW GUINEA: Mabaduan, *Brass* 6539, April 1936, common in small scrubby rain-forest patches in savanna-forests (tree 5-6 m. high).

This fruiting collection shows a very close resemblance to the Polynesian material. The secondary venation of the leaves is more obvious in the material above cited than in the other specimens at hand, the fruit is more strongly rugose on the outside, and the semicircular pyrenes have a very deep indentation on the inner surface.

Canthium graciliflorum sp. nov.

Arbuscula 4-5 m. alta; ramulis ultimis 4-angulatis demum subrotundatis, minute puberulis, internodiis 1.5-4 cm. longis; stipulis valde inaequalibus, altera 2 mm. longa, altera 4 mm. longa, basi latis, ensiformibus; foliis lanceolatis utrinque angustatis, 3-4.7 cm. longis, 1-1.8 cm. latis, apice anguste obtusis, basi in petiolo 2-3 mm. longo attenuatis, subcoriaceis, supra subnitidis, olivaceis, subtus opacis, interdum costa versus basim minute puberulis, ceterum glabris, nervis lateralibus utrinsecus \pm 4 oblique adscendentibus marginem versus arcuatim confluentibus, utrinque inconspicuis; corymbis axillaribus bifurcatis vel trifurcatis, 1.5-1.7 cm. longis latisque; floribus plerumque breviter pedicellatis; ovario subgloboso glabro

vix 1 mm. longo; calycis limbo brevissimo, minute 5-dentato; corollae tubo 1 mm. longo, fauce pilis reflexis barbato, lobis 2.5 mm. longis, linearibus, patentibus vel reflexis; staminibus fauce insertis, filamentis 1.5 mm. longis, antheris sagittatis, 1.5 mm. longis, apice apiculatis; stylo circiter 4 mm. longo; stigmatе mitriforme, apice bilobato; fructibus non visis.

BRITISH NEW GUINEA: Tarara, Wassi Kussa River, *Brass* 8596 (TYPE), Dec. 1936, common and conspicuous in brushy rain-forest fringing river (slender tree 4–5 m. tall; branches semi-erect; leaves smooth and shining; very numerous cream-colored flowers).

This species is related to *Canthium odoratum* (Forst. f.) Seem., but the leaves are narrower and without domatia; the inflorescence is much shorter and the flowers are slightly smaller in all the parts. In some ways, particularly in the outline of the leaves and their tendency to shine, the plant suggests one passing in Australia as *Canthium lucidum* Hook. & Arn., which perhaps more correctly should be known as *C. lamprophyllum* F. v. Muell. Here again in comparison the Papuan material is less coarse in every way than the Queensland collections. In the Gray Herbarium is a small fragment from Hooker's herbarium collected on Gambier Island by Beechey labelled *C. lucidum* Hook. & Arn. The fragment is probably from the type or an isotype and there is no question in our minds that it is identical with *C. odoratum* (Forst. f.) Seem., but it is scarcely the same as the Australian material so-named.

Canthium brevipes sp. nov.

Arbuscula 3–5 m. alta; ramulis in sicco atro-cinereis vel brunnescentibus, novellis nigrescentibus, glabris, internodiis 2–4 cm. longis; stipulis brevibus, 1–2 mm. longis, caducis; foliis ellipticis vel oblongo-ellipticis, 7–12 cm. longis, 2.2–4.5 cm. latis, utrinque aequaliter angustatis, apice obtusis vel obtuse acuminatis, basi cuneatis, chartaceis, in sicco supra atro-fuscis, subtus olivaceis, glabris, nervis lateralibus utrinsecus 6–8 utrinque manifestis non prominulis in axillis domatia minuta foventibus; floribus in tuberculis axillaribus 1–9-umbellatis; pedicellis 2–3 (–6 in fructu) mm. longis; ovario subgloboso, cum calyce \pm 1.5 mm. longo; calycis tubo inconspicuo, margine minute dentato ciliato; corollae tubo 3–4 mm. longo intus retrorse pubescente, fauce et lobis basi villosis, lobis 2.2–2.5 mm. longis, lanceolatis acutis; antheris circiter 1 mm. longis, sessilibus, in fauce insertis, apice mucronatis; stylo glabro, 4 mm. longo; stigmatе mitriforme, apice \pm reflexo; fructibus usque 1.9 cm. latis et 1.1 cm. longis, divaricatim bilobatis facie fructum *Guioae* admonentibus; pyrenis extus rugulosis, oblique semi-rotundis latere ventrali incis; seminibus valde curvatis.

BRITISH NEW GUINEA: Lake Daviumbu, Middle Fly River, *Brass* 7470, Aug. 1936, rain-forest, common in lakeshore undergrowth (tree 3–5 m. high; fruit red); Penzara, between Morehead and Wassi Kussa Rivers, *Brass* 8443 (TYPE), rain-forest (small tree fringing a permanent waterhole; flowers yellow).

Canthium brevipes is closely related to *C. Valetonianum* S. Moore, if we have rightly interpreted the latter species. In the former the veins of the leaves are closer together; the fruit is broader and at the apex has a broad shallow depression not characteristic of Moore's species. At a glance the fruit somewhat suggests that of certain species of *Guioa* in contour; in fruit the pedicel is only 6 mm. long, whereas in the other species which we

have seen the pedicel has elongated to 1 cm. or more in length. This group of species with umbellate flowers needs a revision from a specialist's point of view.

Canthium korrense (Val.) Kanehira, Bot. Mag. Tokyo 46: 671. 1932.

Plectronia korrensis Val. Bot. Jahrb. 63: 311. 1930.

SOLOMON ISLANDS: Florida (N'Gela): North end of the island, *Brass* 3510, Jan. 1933, alt. 75 m., hill rain-forests (tree 5 m. tall, with close gray bark; flowers white or pale yellow; fruit smooth, pale red); Guadalcanal: Mamassa, Konga, *Kajewski* 2479, Feb. 1931, alt. 400 m., rain-forest (tree up to 18 m. high, on banks of freshwater creeks; fruit dull red when ripe, 1.2 cm. long, 1.4 cm. broad).

This material seems to be a very good match for the description and material collected at Ponape. The flowers are perhaps nearer 6 mm. long rather than 4 mm. as given in the original description.

Canthium longiflorum (Val.) comb. nov.

Plectronia longiflora Val. Bot. Jahrb. 61: 56. 1927.

NETHERLANDS NEW GUINEA: Bernhard Camp, Idenburg River, *Brass* 13971, Apr. 1939, alt. 50 m., rain-forest subject to occasional flooding (undergrowth tree 6 m. tall; flowers white). BRITISH NEW GUINEA: Tarara, *Brass* 8509, Dec. 1936, common in rain-forest undergrowth (shrub 2 m. high; fruit pink).

Described from Northeast New Guinea. The second specimen cited is in fruit only but seems to fit better here than elsewhere at present.

Canthium Schlechterianum nom. nov.

Plectronia nitens Val. Bot. Jahrb. 61: 57. 1927.

NORTHEAST NEW GUINEA: Yoangen, *Clemens* 6492, June 1937, alt. about 1250 m.

This collection agrees with Valeton's description except that the corolla-lobes are about 12 mm. long rather than 5 mm. The specific epithet *nitens* is pre-empted in the genus *Canthium*. The species is known only from New Guinea, and only in the flowering stage.

? *Canthium megistocarpum* sp. nov.

Arbor parva; ramulis brunnescentibus, novellis in sicco atro-olivaceis, glabris; internodiis 3–7.5 cm. longis; stipulis inaequalibus, 5–10 mm. longis, basi latis, ensiformibus; foliis oblango-lanceolatis, 18–27 cm. longis, 5.5–7.5 cm. latis, apice longe acuminatis, acumine 1–2 cm. longo, basi cuneatis, chartaceis, glabris, nervis lateralibus utrinsecus 8 vel 9 supra leviter impressis, subtus prominulis, venis inconspicue manifestis, laxis; petiolo circiter 9 mm. longo; floribus non visis; fructibus pyriformibus, in sicco 7 cm. longis, 4.5 cm. diametro; pyrenis 2, endocarpio osseo extus irregulariter tuberculato; semine pendulo ad tertium superum ovarii longitudinis affixo.

NETHERLANDS NEW GUINEA: 2 km. southwest of Bernhard Camp, Idenburg River, *Brass* 13476 (TYPE), March 1939, alt. 800 m., small tree of rain-forest substage (large pyriform green pithy fruit up to 10 cm. long and 7.5 cm. in diameter).

This species may be related to *Canthium Schlechterianum* Merr. & Perry (*Plectronia nitens* Val.), but up to the present the only comparable parts are the foliar characters, one having very large flowers, the other very large fruits. Valeton's species, if we have correctly interpreted it, has equal stipules and firmer, broader, and shorter leaves with shorter petioles. Supplementary material of both species is greatly needed.

? *Canthium aurantiacum* sp. nov.

Arbor parva, usque 5 m. alta; ramulis novellis atro-fuscis, glabris; internodiis 1.5–3 cm. longis; stipulis subaequalibus, 5–10 mm. longis, basi latis, apice elongato-ensiformibus; foliis oblongo-lanceolatis, 12.5–14.5 cm. longis, 3.7–4.5 cm. latis, apice breviter acuminatis, acumine obtusiusculo, basi anguste cuneatis vel acutis, glabris, coriaceis, nervis lateralibus utrinsecus 6–8 oblique adscendentibus, utrinque manifestis non prominulis, venis obscuris; petiolo circiter 8 mm. longo; floribus non visis; tuberculis in axillis foliorum 2- vel 3-cicatricosis; fructibus in sicco obovoideis 4 cm. longis, 2.5 cm. diametro, leviter rugulosis; pyrenis 2, endocarpio osseo extus irregulariter tuberculato; semine pendulo ad tertium superum ovarii longitudinis affixo; embryo 2.5 cm. longo, teretiusculo, recto, cotyledonibus brevibus, radícula supera.

BRITISH NEW GUINEA: Kubuna, *Brass* 5580 (TYPE), Nov. 1933, alt. 100 m., ridge-forest substage (small tree 5 m. high; leaves thick, smooth; fruit solitary in axils, orange-yellow, about 4.5 cm. long, 3 cm. or more in diameter).

The leaves of this species are smooth and thicker than are those of most species of *Canthium* from New Guinea; the tubercles in the axils of the leaves are very short and have 2 or 3 scars on the ends, probably indicating the number of flowers or fruits borne there. The fruit is very large compared with that of the other New Guinean species except one, but *C. glabrum* Bl. of Malaysia has fruit as large or larger. In the latter species, however, the leaves are larger, thinner, and broader than in the New Guinean material.

Antirhea Commerson

S. Moore, Jour. Bot. 65: 266. 1927, and Fosberg, Sargentia 1: 121. 1942, include within their concept of the genus *Timonius* DC. plants with fruits characterized by a 4–10-loculed putamen. The latter character, coupled with a persistent calyx and a corolla with imbricate lobes, belongs to the concept of the genus *Antirhea* Commers. As far as we may judge from the material at hand the genus is a valid one. Valetton, Bull. Dép. Agr. Ind. Néerl. 26: 12. 1909, indicates the similarity of the inflorescences in the entire tribe Guettardeae, in which case one would naturally look for generic differences in the fruits. S. Moore simply indicates that *Brass* 946 is apparently a new species of *Timonius*, suggesting its resemblance to *T. subcoriaceus* Val. but noting that the center of the fruit is occupied by a star-shaped woody mass containing 9 pyrenes. We believe that another genus is represented when the fruit contains a putamen (a hardened concrete mass containing the seeds) or, as Fosberg calls it, a fused stone. In the case of *Timonius Kajewskii* (Guill.) Fosb., at least as to the fruiting specimen cited by Fosberg, the pyrenes cohere very closely, but the walls of the adjoining pyrenes maintain their identity; this is apparent in a cross-section of the fruit which shows a definite line between adjacent pyrenes. In *Timonius Smithii* Fosb., from Fiji, the fruit does not contain separate pyrenes as such, but a putamen with 10 locules. Since the latter is a character of *Antirhea* Commers. rather than of *Timonius* DC., the Fijian plant should be called *Antirhea Smithii* (Fosb.) comb. nov. (*Timonius Smithii* Fosb. l.c.).

Antirhea tenuiflora Benth. Fl. Austr. 3: 418. 1867; F. M. Bail. Queensl. Fl. 3: 760. 1900.

BRITISH NEW GUINEA: Tarara, Wassi Kussa River, *Brass* 8525, 8585, Dec. 1936, common in undergrowth of rain-forest (shrub of weak habit 2-5 m. high; leaf-nerves pale; flowers white; fruit red, ovoid).

These collections are intermediate between two Queensland specimens in our herbarium and agree reasonably well with the description of this species. This seems to be the first record of the presence of the genus in New Guinea.

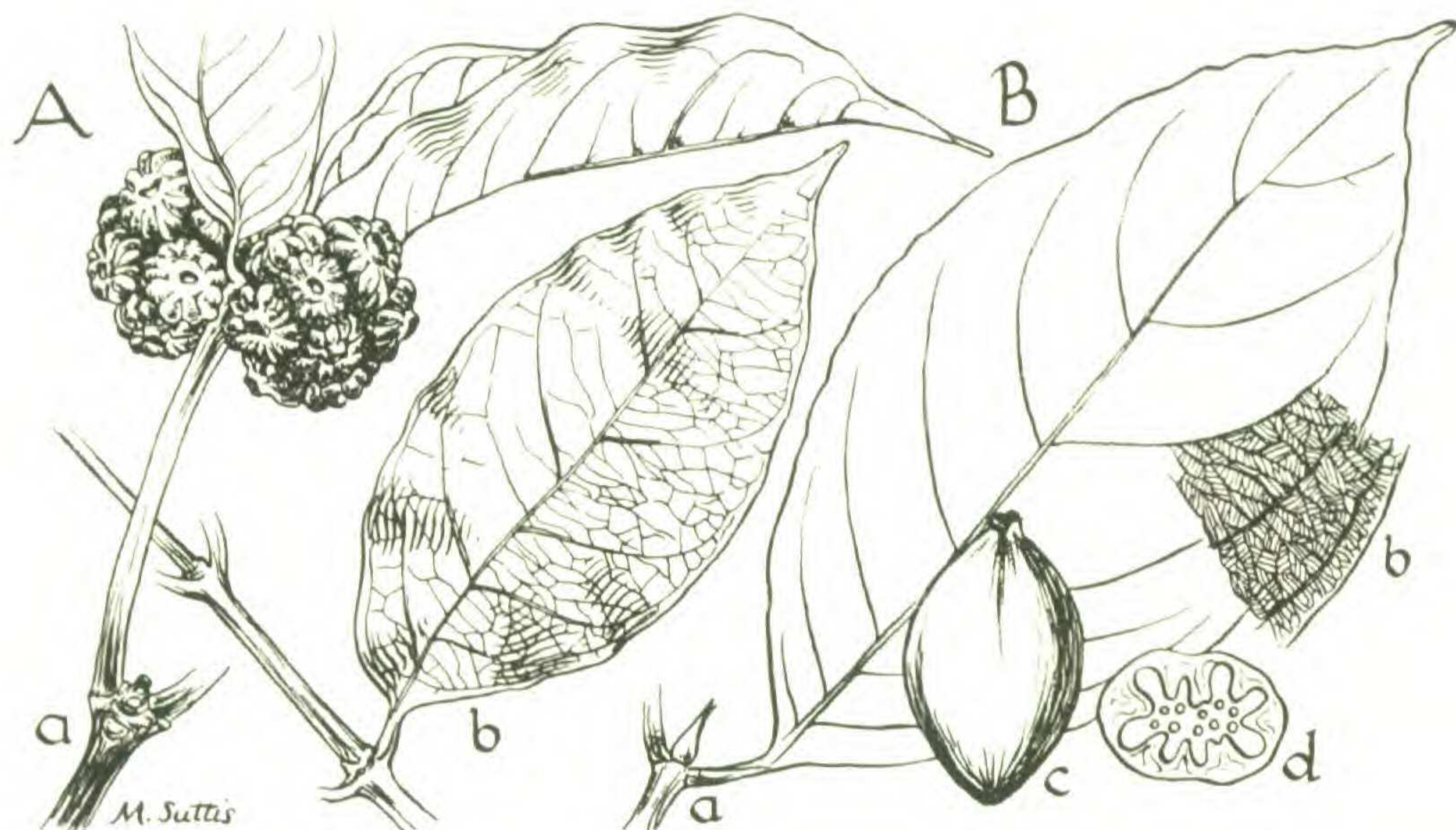


FIG. 1. A. *Morinda costata* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. leaf, $\times \frac{1}{2}$. B. *Antirhea megacarpa* Merr. & Perry: a. leaf and terminal bud, $\times \frac{1}{2}$; b. enlarged portion of leaf to show detail of venation; c. fruit, $\times \frac{1}{2}$; d. cross-section of fruit, $\times \frac{1}{2}$.

Antirhea megacarpa sp. nov. FIG. 1, B.

Arbor \pm 9 m. alta; ramulis cinereis, novellis compressis, internodiis 1.5-5 cm. longis; supra juxta cicatricem novellam stipularum hirtellis; stipulis 6 mm. longis, carinatis, pubescentibus, cito caducis; alabastris lateraliter compressis; foliis ellipticis utrinque angustatis, 8-20 cm. longis, 3-9 cm. latis, apice obtuse acuminatis, basi cuneatis, chartaceis, supra glabris, subtus costa nervisque consperse adpresse hirtellis, nervis lateralibus utrinsecus \pm 9 adscendentibus et arcuatis, supra impressis, subtus prominulis, venis irregulariter positis, utrinque tenuiter prominulis, reticulo laxo, subtus areolis subparallele striatulis; petiolo 1.2-2.5 cm. longo; floribus non visis; fructibus ovoideis, 3.8 cm. longis, 2.5 cm. diametro, calycis lobis (1.5 mm. longis) coronatis; mesocarpio fibris praedito; putamine duriusculo, valde et irregulariter longitudinaliter 8- vel 9-costato, 10-loculato, 3 cm. longo, 1.7 cm. diametro.

BRITISH NEW GUINEA: Ihu, Vailala River, *Brass* 946 (TYPE), Feb. 1926, rain-forest (tree 30 feet tall; bark thick, dark and flaky; flowers solitary, axillary; fruit red).

This plant is so very different from any of the species of *Antirhea* Commers. described from the southwestern Pacific that, in spite of the lack of

flowers, we have described it. The very large fruit and the rather prominent venation of the leaves are its best characters.

Timonius de Candolle

In our work here we are accepting the older concept, also adopted by Valetton, that *Timonius* DC. has fruits with numerous pyrenes, and retaining in *Guettarda* L. and *Antirhea* Commers. those plants having fruits with a 4–10-loculed putamen. Of the approximately 50 species of *Timonius* DC. already described from Papuasia, we believe there are 18 species represented in the Papuan material at hand. Not finding ourselves able to match the remaining collections with the descriptions, they are here presented as new. *Timonius merokensis* Wernham ought to be re-examined as to generic status. The few pyrenes with very small seeds (suggesting thick walls) call to mind the genus *Bobea* Gaudich., or rather *Nelitris* Gaertner, since the latter is the earlier published name. There is considerable variation in the number of pyrenes, and it has not always been easy to express the arrangement of the pyrenes within the fruit. In transverse section across the middle of the fruit, pyrenes may appear to be vertical, horizontal, or obliquely arranged. Most fruits in which the pyrenes are vertical do not have a very large number of pyrenes, and these may be massed, as it were, in the center of the fruit with a fairly fleshy sarcocarp surrounding them, or they may be distributed nearer the margin, the center of the fruit apparently being more or less spongy; fruits usually with numerous pyrenes may show them in horizontal position (if the pyrenes are abundant enough) or obliquely pendulous, those in the lower part of the fruit, of course, being always pendulous and vertical. Seemingly very early in the development of the flower the locules lose their identity as such, and hence the number, which we believe in most cases agrees with the number of stigmas, is not given in our descriptions. In some instances where the pyrenes appear to be vertical we have counted them in the cross-section; in the others, unless the pyrenes were fairly large and could easily be counted separate, we have tried to give the number of rows in the cross-section and also the number from the apex to the base as they appear in a longitudinal section. In any case, we again note the considerable variation in number.

Timonius avenis Val. Bull. Dép. Agr. Ind. Néerl. 26: 46. 1909, Nova Guin. Bot. 8: 473, t. 724. 1911, Bot. Jahrb. 61: 36. 1927.

NETHERLANDS NEW GUINEA: 6 km. southwest of Bernhard Camp, Idenburg River, *Brass* 12913, Feb. 1939, alt. 1200 m., rain-forest epiphyte (tree 5 m. tall); 4 km. southwest of Bernhard Camp, Idenburg River, *Brass* 13310, March 1939, alt. 900 m., frequent in open situations in mossy forest (slender tree 5–7 m. high); same locality, date, and altitude, *Brass* 13628, common high epiphyte in rain-forest (tree 5 m. high; branches upright; leaves concave). BRITISH NEW GUINEA: Mount Tafa, *Brass* 5046, Sept. 1933, alt. 2400 m., common in valley and lower slope forests (tree 15–20 m. high, with dense pale foliaged crown, *Ficus*-like in appearance; leaves thin, glabrous, glossy, pale beneath, obscurely nerved; flowers white; fruit compressed, fleshy, dark shining red).

The first three collections cited unquestionably belong to the same

species. The leaves are much stiffer than those of the plants which we take for typical *T. avenis* Val. but they do not differ essentially from the description or the plate. The collection from Mount Tafa has more obtuse leaves than those from Netherlands New Guinea, the peduncles and the calyces are somewhat shorter, and the upper surface of the leaves is not so definitely striate as in typical *T. avenis* Val. As we do not have much material for comparison, it seems best for the present to place the collection here.

Timonius pubipetalus (Val.) comb. nov.

Timonius avenis var. *pubipetalus* Val. Bot. Jahrb. 61: 37 (as *pubipetala*). 1927.

NETHERLANDS NEW GUINEA: 6 km. southwest of Bernhard Camp, Idenburg River, *Brass & Versteegh* 12592, Feb. 1939, alt. 1200 m., rare on slopes of primary forest (tree 18 m. tall, 39 cm. diameter; wood dark red; flowers white); same locality, date, and altitude, *Brass* 12878, subsidiary tree in rain-forest (22 m. high; leaves pale beneath; flowers white); 4 km. southwest of Bernhard Camp, Idenburg River, *Brass* 13687, March 1939, alt. 850 m., bank of rain-forest stream (much branched tree 10 m. high; flowers brownish). BRITISH NEW GUINEA: Fly River, 528 mile Camp, *Brass* 6804, May 1936, alt. 80 m., epiphyte in forest-canopy (small tree or shrub; stipules and corolla pubescent).

Brass 6804 differs from the other collections cited in having definitely whitish pubescent terminal buds, and the upper surface of the leaves is lightly striulate; the fruits are deeply 6-8-sulcate. The other collections are all staminate; all the corollas are pubescent; the leaves are larger than given for the type, 5.5-12 cm. long, 1.5-3.5 cm. broad, and the cuticle is not striate on the upper surface. The material seems to be quite distinct from *Timonius avenis* Val. as we understand that species. In *Brass* 12878 the terminal bud is slightly appressed-pubescent.

Timonius belensis sp. nov. FIG. 2, A.

Arbor 12-19 m. alta, glaberrima; ramulis fuscis; internodiis 1.5-6 cm. longis, novellis valde compressis; stipulis 3-5 cm. longis, oblongo-lanceolatis sensim acuminatis; foliis oblongo-oblanco-latis vel anguste ellipticis, 5.5-15 cm. longis, 1.8-5.5 cm. latis, apice acutis, basi cuneatis, in petiolo angustatis, tenuiter coriaceis, costa supra impressa, subtus prominente, nervis lateralibus utrinsecus 7-9 utrinque vix perspicuis, cuticula striata, striis ut nervis fere aequaliter manifestis; petiolo 0.6-2 cm. longo; inflorescentiis ♂ non visis; floribus ♀ solitariis axillaribus, pedunculatis, pedunculo 5-7 mm. longo; ovario et calyce urceolato, calyce vix 1 mm. longo, membranaceo, truncato; corollae tubo 4 mm. longo, 2 mm. lato, lobis 10-12, oblongo-linearibus, acutis, 3 mm. longis; staminibus 10-12, 3 mm. longis, apice vix exsertis; fructibus depresso-globosis, 7 mm. longis, 10 cm. diametro, apice calycis tubo brevi coronatis; pyrenis \pm 72 vel multis, fere verticalibus, exterioribus paulo obliquis.

NETHERLANDS NEW GUINEA: Bele River, 18 km. northeast of Lake Habbema, *Brass & Versteegh* 11110, Nov. 1938, alt. 2250 m., frequent substage tree of primary forest (tree 19 m. high, 31 cm. diameter; bark gray-brown; fruits green); same locality, *Brass* 11527 (TYPE), Nov. 1938, alt. 2400 m., common in old secondary forest (tree 12-15 m. high).

This species is an ally of *Timonius avenis* Val.; it has much larger leaves, striate on both surfaces, and inconspicuous primary veins. The foliar characters appear to be more clearly cut than those of the flower or fruit.

Timonius modestus sp. nov. FIG. 2, B.

Arbor parva epiphytica, alabastris, corollis et interdum pedunculis puberulis vel cinereo-pubescentibus exceptis glabra; internodiis 1–4 cm. longis, novellis compressis; stipulis usque 5.5 cm. longis, oblongo-lanceolatis, longe acuminatis, extus praecipue secus mediam cinereo-puberulis vel pubescentibus interdum glabris; margine \pm vernicosis; foliis tenuiter coriaceis vel valde chartaceis, ellipticis vel leviter obovatis, 4–12 cm. longis, 2–6.5 cm. latis, apice minute et obtuse acuminatis, vel breviter acutis, basi cuneatis vel in petiolum angustatis, latissimis paulo ultra medium, in sicco margine saepissime leviter crispulis, nervis lateralibus occultis, cuticula supra dense striata, subtus striis vix manifestis; petiolo 0.8–1.5 cm. longo; inflorescentiis axillaribus, pedunculatis, pedunculo usque 1.5 cm. longo, δ ramosis, 5–7-floris; floribus sessilibus; calyce glabro, tubulato, 2 mm. longo, trun-

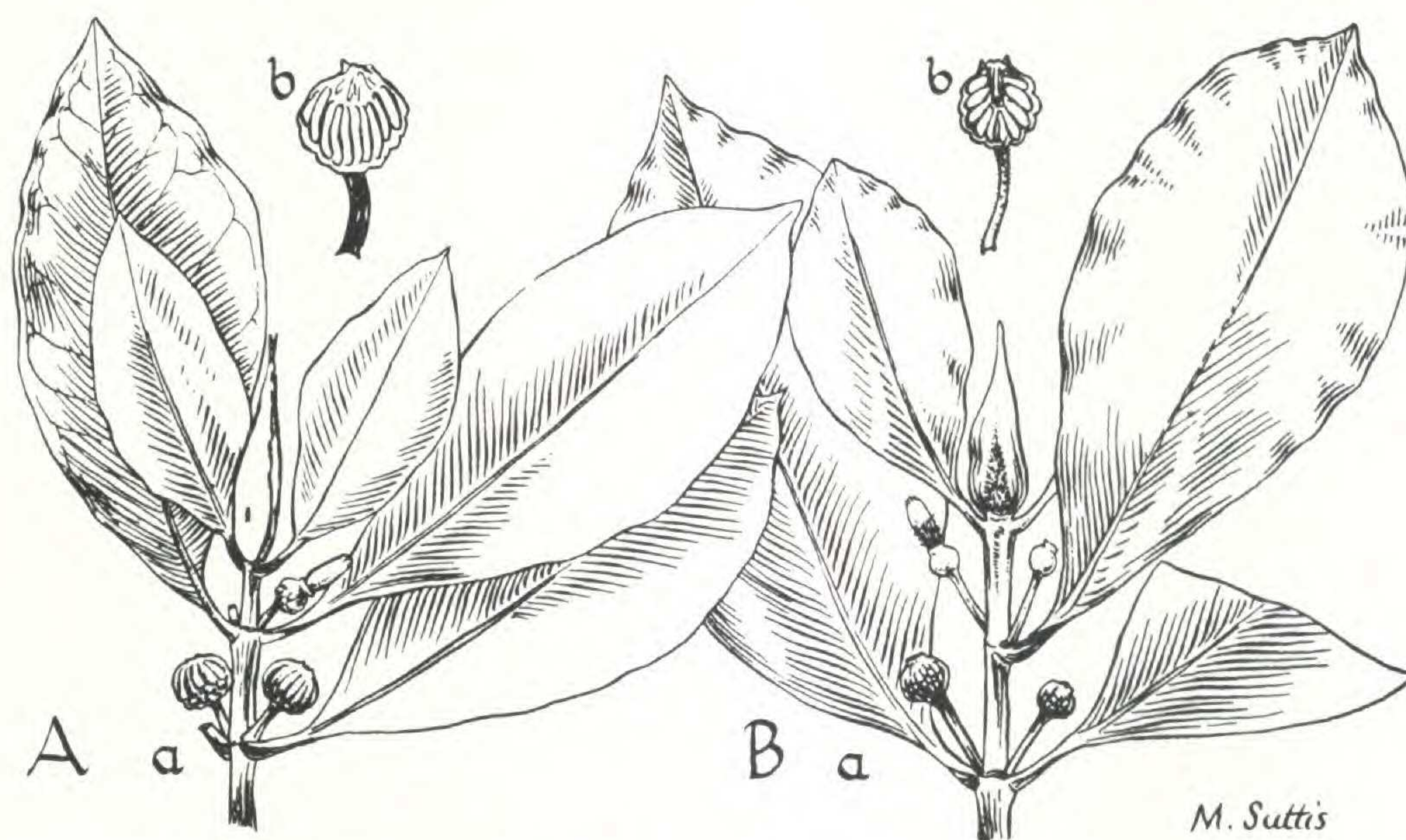


FIG. 2. A. *Timonius belensis* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. longitudinal section of fruit, $\times 1$. B. *Timonius modestus* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. longitudinal section of fruit, $\times 1$.

cato; corollae tubo 1 cm. longo, extus pubescente, lobis 4, ovatis, obtusis vel acutiusculis, extus pubescentibus, 3 mm. longis; antheris 7 mm. longis, apice tantum exsertis; stylo 3 mm. longo; floribus φ solitariis, ovario et calycis tubo urceolatis, 4 mm. longis; corollae tubo extus pubescente, 4–5 mm. longo, lobis 8 oblongis, 3.5 mm. longis, extus pubescentibus; stylo crasso, 6 mm. longo stigmatibus 8 terminato; fructibus depresso globosis, circiter 1 cm. diametro; pyrenis probabiliter ± 90 , oblique pendulis, longitudinaliter ex apice ad basim 6 compacte superpositis, parvis.

BRITISH NEW GUINEA: Fly River, 528 mile Camp, Brass 6748 (TYPE), May 1936, alt. 80 m., common in forest-canopy (epiphytic small tree; flowers white; immature fruit obscurely ribbed, somewhat compressed); Palmer River, 2 miles below junction Black River, Brass 7076, June 1936, alt. 100 m., small epiphytic tree common in forests.

This species closely approaches *Timonius avenis* Val. but it has pubescent buds and corollas, larger leaves, and pyrenes more obliquely arranged than in Valetton's species.

Timonius carstensensis Wernh. Trans. Linn. Soc. II. Bot. 9: 73. 1916.

BRITISH NEW GUINEA: East Mount Tafa, *Brass* 4077, May 1933, alt. 2350 m., edge of a small burnt-over clearing in mossy forest (erect branching bush 2 m. tall; branches shining gray-brown; leaves thick, pale green; flowers white; fruit green, somewhat compressed, costate); Murray Pass, Wharton Range, *Brass* 4705, Aug. 1933, alt. 2840 m., one of the rarer forest trees (spreading pale-barked tree, in appearance much like a *Ficus*; leaves above dark and shining, beneath yellowish; flowers white).

Until these can be compared with the type, it seems better to place the two cited collections here rather than elsewhere. In one collection the stipules are densely appressed-villous inside, while in the other they seem to be glabrous except for the colleters at the base.

Timonius scabriflorus (Val.) comb. nov.

Timonius avenis var. *scabriflorus* Val. Bot. Jahrb. 61: 37 (as *scabriflora*). 1927.

NORTHEAST NEW GUINEA: Yunzaing, *Clemens* 3568 *bis* (perhaps an error for 3586 *bis*), 3586A, July 1936, alt. 1350 m., in forest.

Fortunately we have at hand an isotype of Valetton's variety. It seems preferable to us to consider it as worthy of specific rank. It is true that the upper surface of the leaves is striulate much as in *Timonius avenis* Val., but the pubescence on the lower surface, the branchlets, the terminal buds, the floral axes, the petioles, and the corolla is a considerable departure from that of the species. In addition, the staminate flowers appear to have the anthers included, and the pyrenes are obliquely pendulous from the central column of the fruit. The staminate inflorescence has 3–5 flowers; peduncle 3–5 mm. long, the branches about 3 mm. long; calyx membranous, about 1 mm. long, truncate; corolla not yet in full anthesis, outside shortly hirsute to the tips of the lobes, the tube cylindric or slightly narrowed at the throat, 9 mm. long, the lobes ovate, acute, 3 mm. long; anthers 6 mm. long, inserted about 4 mm. above the base of the corolla, but included as indicated by the slightly constricted throat of the corolla, the style about 4 mm. long, glabrous. In one fruit 90 pyrenes were counted, in the longitudinal section of another there were 6–7 pyrenes from the apex to the base of the fruit. In a cross-section of the fruit the pyrenes tend to slide apart at an oblique angle rather than be cut directly across as in *T. avenis* Val.

Timonius trichanthus sp. nov. FIG. 3, C.

Arbor parva; ramulis fusco-cinereis, apicem versus dense et breviter hirsutis, pilis patentibus, internodiis 1–4 cm. longis, novellis compressis; stipulis 1.5–3 cm. longis dense patenti-hirsutis, oblongo-lanceolatis, acuminatis; foliis 4.5–11 cm. longis, 1.5–4 cm. latis, anguste ellipticis vel oblongo-lanceolatis, apice breviter acuminatis vel acutis, basi cuneatis vel obtusis, tenuiter coriaceis, supra glabris vel costa puberulis, subtus (costa densius) regulariter haud dense breviter hirsutis; costa supra impressa, subtus prominente, nervis lateralibus utrinque obscuris; petiolo 6–12 mm. longo, hirtello; inflorescentiis axillaribus, pedunculatis, ♂ saepissime 5-floris; pedunculo 5 mm. longo hirtello, ramis circiter 4 mm. longis; calyce truncato, 1.5 mm. longo, hirsuto; corolla tantum in alabastro visa, tomentella, crassiuscula, tubo 4 mm. longo, lobis 4, obtusis, 2 mm. longis; antheris 3.5 mm. longis in tubo medio insertis, in anthesi exsertis; stylo 2 mm. longo; floribus ♀ solitariis; pedunculo 1–1.5 cm. longo, hirtello; ovario

glabro 3 mm. longo; calyce truncato, 1 mm. longo, hirsuto; corolla in alabastro tantum visa, tomentella, crassiuscula, tubo 6 mm. longo, lobis 6, 2 mm. longis; antheris 6, 2.5 mm. longis, in parte superiore tubi insertis vix exsertis; stylo crassiusculo, 5 mm. longo, stigmatibus 6 terminato, glabro; fructibus depresso globosis, calycis tubo coronatis, 6 mm. longis, 7 mm. diametro, 6-sulcatis; pyrenis 45, verticalibus.

NORTHEAST NEW GUINEA: Ogeramnang, *Clemens* 4747, Dec. 1936, alt. \pm 1750 m., along trail; vicinity of Bulung River, Nomanenem Camp, *Clemens* 5206, Jan. 1937, alt. 900–1500 m., hill trail; Matap, *Clemens* 11158B (TYPE, isotype in Herb. Univ. Michigan), Feb.-Apr. 1940, alt. 1500–1800 m. (tree 7–10 cm. diameter; flowers white; fruit green).

This species is closely related to *Timonius scabriflorus* (Val.) Merr. & Perry. It may be distinguished by the difference in the leaf-outline; in the latter species the leaves are more sharply tapering both toward the apex and the base, the pubescence is of shorter hairs, the terminal buds tend to be much less shaggy in appearance, the calyx is glabrous, and the pyrenes are obliquely pendulous, while the δ flower-buds are fairly sharply acute. In our species, on the other hand, the leaves are not so sharp toward the apex and the base, the terminal buds are shaggy to the naked eye, the calyx is pubescent with fairly long appressed hairs, the pyrenes are vertical and completely fill the cross-section of the fruit, being about half as many as in the other species, while the δ flower-buds are obtuse.

Timonius trichanthus var. *dolichophyllus* var. nov. FIG. 3, D.

Foliis elongatis, oblongo-lanceolatis, 7–17 cm. longis, 1.5–4.5 cm. latis, alabastro terminali adpresse sericeo-pubescente.

NETHERLANDS NEW GUINEA: 15 km. southwest of Bernhard Camp, Idenburg River, *Brass* 12398 (TYPE), Jan. 1939, alt. 1500 m., rain-forest, common on banks of a stream (spreading, 5–6 m. high).

Apart from the longer and narrower leaves and the appressed sericeous pubescence of the terminal bud, this collection seems to agree with the type of the species. The calyx is slightly less pubescent, but the pubescence is present on most of the young fruits and the pyrenes show the same regular arrangement which characterizes the species.

Timonius trichocladus sp. nov. FIG. 3, B.

Arbor usque 18 m. alta; ramulis dense hispidulis, cinereis, internodiis 1–5 cm. longis, valde compressis; stipulis glabris, usque 3 cm. longis, oblongo-lanceolatis, acuminatis; foliis oblongo-lanceolatis vel obovato-lanceolatis, 3–9.5 cm. longis, 1.5–3.5 cm. latis, apice acutis vel breviter acuminatis, basi \pm anguste cuneatis vel in petiolo attenuatis, in sicco margine leviter recurvis, tenuiter coriaceis, supra glabris, cuticula patentistriata (striis subparallelis hinc inde flexis), subtus glabris vel costa accumbente pilosis, cuticula inconspicue striata, margine versus basim interdum pilosis, nervis lateralibus obscuris; petiolo 5–10 mm. longo, sparsim piloso vel glabro; inflorescentiis axillaribus, pedunculatis, pedunculo 6 mm. longo, glabro vel sparsim pubescente, δ trifloris, flore medio sessili, lateralibus pedicellatis; floribus glabris, calyce tubulato, 2 mm. longo, truncato vel minute dentato; corollae tubo 7 mm. longo, lobis 4 mm. longis, ovatis, acutiusculis; antheris 4 partim exsertis; stylo brevi; flore η solitario; calyce truncato, 1.5 mm. longo; corolla (in alabastro) 6 mm. longa, tubo

4 mm. longo, lobis 5, ovatis, acutiusculis; antheris inclusis; stylo 4 mm. longo, glabro, crassiusculo; stigmatibus 5 brevibus; fructibus globosis, circiter 1 cm. diametro; pyrenis verticalibus, 25–30 vel pluribus.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass* 9504, Aug. 1938, alt. 3225 m., common tree in mossy closed forest of more sheltered hollows (8–10 m. tall; leaves convex; flowers white); same locality, *Brass* 9505 (TYPE), Aug. 1938, alt. 3225 m., locally abundant in forest undergrowth (tree 3 m. high; leaves somewhat convex; flowers white; fruit black, laterally compressed, \pm 1.1 cm. long); 9 km. northeast of Lake Habbema, *Brass & Versteegh* 10486, Oct. 1938, alt. 2950 m., rare in old secondary forest (tree 15 m. tall, 29 cm. diameter; flowers white); same locality, *Brass* 10568, 10642, alt. 2800 m., rare in mossy forest, common in old secondary forest (tree 5–15 m. high); same locality, *Brass & Versteegh* 11102, Oct. 1938, alt. 2700 m., rare in mossy forest (tree 18 m. high, 29 cm. diameter; bark rough, brown; fruits green).

This species certainly belongs to the same alliance as *Timonius avenis* Val. Its most striking character is the coat of dense short rather stiffish spreading hairs covering the upper part of the branchlets. The striations

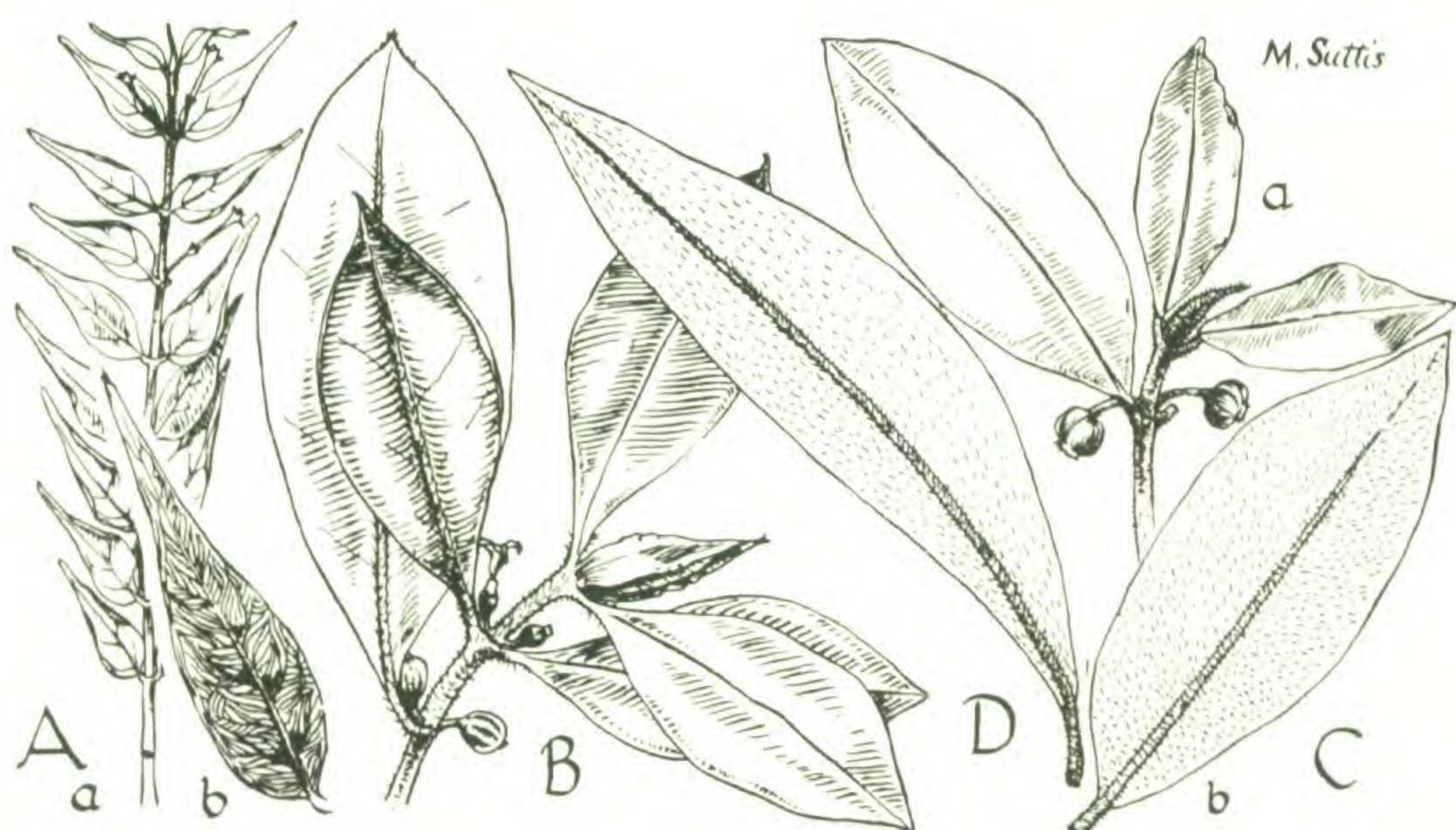


FIG. 3. A. *Timonius virgatus* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. leaf, $\times 1$, showing detail of venation. B. *Timonius trichocladus* Merr. & Perry: habit, $\times \frac{1}{2}$. C. *Timonius trichanthus* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. leaf, $\times \frac{1}{2}$, showing lower surface. D. *Timonius trichanthus* var. *dolichophyllus* Merr. & Perry: leaf, $\times \frac{1}{2}$, showing lower surface.

on the upper surface of the leaf are not so close together as in *T. avenis* Val., spreading in direction rather than ascending, and not quite so distinct. The lower surface may be glabrous or on the midrib especially toward the base of the leaf may be seen weak accumbent hairs, a continuation of those on the petiole, as it were; the same type of hair also appears on the very lower margin in younger leaves, but in some specimens both leaves and petioles are glabrous.

Timonius virgatus sp. nov. FIG. 3, A.

Frutex epiphyticus, 1–1.5 m. altus; ramis cinereis, ramulis ultimis gracilibus 1 mm. diametro, hirtellis, compressis, sub foliorum insertione manifeste

incrassato-nodosus, internodiis 1–2 cm. longis; stipulis glabris vel apice barbatis, 4–6 mm. longis, attenuatis, cito caducis; foliis tenuiter coriaceis, lanceolatis, 1–3.8 cm. longis, 0.4–1 cm. latis, apice caudato-acuminatis, acumine 0.5–1.3 cm. longo in parte inferiore 2–3 mm. lato, basi subrotundatis vel obtusis, in sicco margine leviter revolutis, utrinque glabris vel subtus costa adpresse hirtellis, nervis lateralibus infra medium folium utrinsecus 2 utrinque submersis, in axillis barbellatis, sursum nullis, venis obscuris, cuticula utrinque striulata vel minute lineato-rugosa; petiolo 1–2 mm. longo; inflorescentiis ♂ trifloris, floribus bracteatis, lateralibus pedicellatis, flore medio sessili; pedunculo \pm 1 cm. longo, glabro; calyce 4-dentato, 1–1.5 mm. longo, glabro; corollae tubo (sub anthesin) 6 mm. longo, glabro, lobis ovatis obtusis, 1 mm. longis, extus pubescentibus; antheris 2.5 mm. longis, apice exsertis; stylo 4 mm. longo; floribus ♀ solitariis, pedunculatis, bracteatis, bracteis crassiusculis, ovatis, 1 mm. longis; pedunculo \pm 1 cm. longo, glabro; ovario et calyce 2.5 mm. longo, calyce 4-dentato, dentibus acutis; corollae tubo 7 mm. longo, glabro, lobis obtuse ovatis, 1.5 mm. longis latisque, extus pubescentibus; antheris 2 mm. longis, inclusis; stylo 8 mm. longo, consperse pilosulo, stigmatibus 4 vel 5 terminato; fructibus haud carnosus, ovoideis, circiter 5 mm. diametro, calyce coronatis; pyrenis \pm 14, verticalibus, confertis.

NETHERLANDS NEW GUINEA: 15 km. southwest of Bernhard Camp, Idenburg River, *Brass* 12404 (TYPE), Jan. 1939, alt. 1800 m., very common epiphyte in mossy forest (weak, straggling shrub 1–1.5 m. tall; flowers red; fruit immature).

Three already described species, *Timonius filipes* Wernh. and var. *acuminatissima* Wernh., *T. caudatus* Val., and *T. minutifolius* Val., are very closely connected with *T. virgatus*. In leaf-size our species falls within the limits of that given for *T. caudatus* Val., which in turn overlaps the measurement of the smaller leaves of *T. filipes* Wernh. and the largest leaves of *T. minutifolius* Val. In all three the ovary is hairy, while in *T. virgatus* the ovary is glabrous, as is also the corolla-tube, even in bud only the lobes being sericeous on the outer surface; the leaves are equally striulate on both surfaces. A comparison of the types as well as a series of collections are really necessary to determine what are really specific differences and what are only environmental variations.

Timonius longitubus sp. nov. FIG. 4, B.

Arbor epiphytica vel terrestris; ramulis crassiusculis 4–7 mm. latis, obtuse angulatis vel compressis; internodiis brevibus, 7–10 mm. longis, novellis dense adpresse pubescentibus; stipulis 6–8 cm. longis, lanceolatis, attenuato-acuminatis, extus sparsim pilosis vel fere glabris, intus glabris, caducis; foliis ellipticis vel leviter obovato-ellipticis, 12–20 cm. longis, 6–9 cm. latis, in tertio supero latioribus, apice acutis vel brevissime acuminatis et interdum mucronatis, basi anguste cuneatis, glabris, tenuiter coriaceis vel chartaceis, nervis lateralibus utrinsecus 5–7 utrinque prominulis, adscendentibus et arcuatis, cuticula supra sub lente minute dense striatula, striulis in areolis parallelis, subtus levi; petiolo 2.5–3.5 cm. longo, atro-brunnescente; inflorescentiis axillaribus, ♂ semel dichotomis, pedunculo 1 cm. longo, ramis 1 cm. longis; floribus \pm 7, glabris, sessilibus; calyce subtubulato, 1 cm. longo, 4 mm. diametro, intus basi pubescente et glanduloso; corollae tubo 1.6 cm. longo, lobis 4, 9 mm. longis, linearibus; antheris 6 mm. longis, prope tubo

medio insertis; floribus ♀ solitariis, (alabastro tantum viso) glabris, pedunculo 1–2 cm. longo; ovario globoso 6 mm. diametro; calyce tubulato, 6 mm. longo; corolla 1.5 cm. longa, lobis 8; staminibus 16 (8 quam reliquis longioribus); stylo brevi, stigmatibus plurimis terminato serie duplici superpositis, 8 quam reliquis longioribus; fructibus in sicco 1–1.5 cm. diametro, globosis, apice calycis tubo coronatis; pyrenis numerosissimis, in fructu transverse secto ± 32 , longitudinaliter ex apice ad basim ± 20 compacte superpositis.



FIG. 4. A. *Timonius solomonensis* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. fruit, $\times \frac{1}{2}$; c. longitudinal section of fruit, $\times \frac{1}{2}$. B. *Timonius longitubus* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. enlarged portion of leaf to show detail of venation; c. fruit, $\times \frac{1}{2}$.

SOLOMON ISLANDS: Bougainville: Koniguru, Buin, *Kajewski* 2009, Aug. 1930, alt. 800 m., rain-forest, common (small tree growing as a parasite on larger trees; fruit pink when ripe, 2.5 cm. long, 2.5 cm. diameter, crowned by the tubular calyx); Ysabel: Kakatio, *Brass* 3244, Dec. 1932, alt. 900 m., rain-forest, common (small compact tree growing on other trees; leaves rather fleshy; stipules and falling leaves red; flowers cream-colored); Tiratona, *Brass* 3316 (TYPE), Dec. 1932, alt. 600 m., rain-forest, common (tree 15 m. tall; leaf-nerves very pale; flower white; fruit soft, fleshy, smooth, purple-red); Guadalcanal: Uulolo, Tutuve Mt., *Kajewski* 2541, April 1931, alt. 1200 m., rain-forest, common (small tree growing on a larger tree, usually from a cavity; fruit yellow-green when ripe, length 2 cm., diameter 1.9 cm.; for pains in the stomach the bark is macerated and applied to the affected spot).

We are at a loss at present to suggest a closely related species. *Timonius longitubus* appears to be readily distinguished by the rather long terminal bud, the glabrous character apart from the dense pubescence on the new internodes and the sparse pubescence of the stipules covering the buds, the long tubular calyx, and the very numerous and small pyrenes.

Timonius solomonensis sp. nov. FIG. 4, A.

Arbor parva gracilis; ramulis maturis pallidis glabris, novellis compressis, hirtellis, internodiis 1–3 cm. longis; stipulis triangularibus, breviter acuminatis, 5–7 mm. longis, basi 5–6 mm. latis, extus hirtellis, intus adpresse villosis, subpersistentibus; foliis ellipticis vel obovatis, chartaceis, 6–19 cm.

longis, 3–8.5 cm. latis, utrinque angustatis vel interdum 2–5 cm. supra basim subabrupte vel sensim angustioribus, apice acuminatis, acumine circiter 1 cm. longo, obtusiusculo, basi obtusis vel cuneatis, supra costa puberulis, subtus costa venisque hirtellis, novellis consperse minute hirtellis, nervis lateralibus utrinsecus 7–10, patenti-adscendentibus, supra impressis, subtus perspicuis, venis subclathratis vix prominulis, reticulo sub lente manifesto; petiolo 7–20 mm. longo, breviter hirtello; floribus ♂ ignotis; floribus ♀ solitariis (alabastris juvenilibus tantum visis), pedunculatis, dense tomentosis, bracteatis; pedunculo 1–1.5 cm. longo; bracteis ovatis vel triangularibus \pm 3 mm. longis, caducis; ovario depresso globoso; calyce urceolato 5- vel 6-dentato; corolla ut videtur 8-lobata; staminibus 8; stylo verisimiliter apice in 8 lobis stigmaticis diviso; fructibus depresso globosis, apice calycis tubo persistente coronatis, \pm 1.5 cm. diametro, dense tomentellis fere velutinis; pyrenis \pm 38, in fructu longitudinaliter secto ex apice ad basim 4 compacte superpositis.

SOLOMON ISLANDS: Ysabel: Meringe, *Brass* 3349, Dec. 1932, lowland rain-forest (slender small tree; leaves with pale nerves; fruit striate, very pale green); San Cristoval: Hinuahaoro, *Brass* 2885 (TYPE), Sept. 1932, alt. 800 m., rain-forest (small tree; flowers white; fruit green, 1.5 cm. diameter, striate).

Timonius solomonensis appears to be most like *T. laevigatus* Val. In the former wherever there are leaves there are also stipules, indicating a tendency for them to persist longer than usual; in Valeton's species the stipules have already fallen, also the adult leaves are glabrous and shortly petioled, while in ours the adult leaves are hirtellous on the midrib and main veins of the lower surface; again Valeton describes the pyrenes as few in the center of a fruit 2 cm. in diameter, a character hardly comparable to that in our species. Possibly if abundant material were available these differences might be bridged, but until that time we are regarding them as distinct species.

Timonius nitens sp. nov. FIG. 5, B.

Arbor usque 21 m. alta, gemmis et corollis aureo-sericeis, ceterum glabris; internodiis compressis griseis, 1–2 cm. longis; stipulis 1.5–4 cm. longis, basi 6 mm. latis, versus apicem sensim attenuatis, extus aureo-sericeis, intus glabris basi colleteribus confertis praeditis, cito caducis; foliis ellipticis vel oblanceolato-ellipticis, 6.5–13 cm. longis, 3–7 cm. latis, basi rotundatis vel subtruncatis, apice breviter et obtusissime acuminatis, acumine 5 mm. longo, 5–7 mm. lato, in sicco margine interdum undulatis, novellis margine aureo-pubescentibus, cito glabratis, maturis glabris, coriaceis, supra nitidulis, nervis lateralibus utrinsecus 8–10 utrinque prominulis, in axillis domatiiferis et interdum minute barbatis, domatiis minutis, reticulo irregulare, supra inconspicuo, subtus manifesto; petiolo 4–6 mm. longo, nigrescente; inflorescentiis ♂ immaturis tantum in axillis foliorum superiorum, floribus confertis (3 vel 4), pedunculis 5 mm. longis, calycis tubo campanulato, 3 mm. longo, intus pilosulo, extus sparsim pilosulo, margine leviter lobato, lobis usque 1 mm. longis; corolla extus sericea, tubo 4 mm. longo, lobis 4 mm. longis, oblongis; antheris in tubo medio insertis, 3 mm. longis; stylo 3 mm. longo; floribus ♀ singulis vel pedunculis trifloris; bracteis subnullis; pedunculo 1–1.5 cm. longo; ovario circiter 4 mm. longo, subgloboso, glabro; calycis tubo 2.5 mm. longo, extus consperse pilosulo, intus pilosulo, lobis

5 vel 6, usque 1.5 mm. longis obtusis; corollae tubo 6–7 mm. longo, extus aureo-sericeo, lobis 8, circiter 3 mm. longis, extus sericeis; staminibus 8 in tubo medio insertis; stylo 5 mm. longo, sparsim pilosulo, crasso (1–2 mm.), stigmaticis lobis 8, circiter 2–3 mm. longis; fructibus subglobosis, 1 cm. diametro, calyce persistente coronatis, longitudinaliter sulcatis et rugulosis; pyrenis numerosissimis, in fructu transverse secto 16–20, longitudinaliter ex apice ad basim 10 compacte superpositis.

NETHERLANDS NEW GUINEA: 9 km. northeast of Lake Habbema, *Brass & Versteegh 10488, 10488A*, Oct. 1938, alt. \pm 2680 m., frequent in old secondary forest (tree 21 m. tall, 28 cm. diameter; bark smooth, soft brown; flowers white); same locality, *Brass 10994, 10995* (TYPE), Oct. 1938, alt. 2650 m., in secondary forest on old landslip (tree 12 to 15 m. high; leaves shining).

This species in leaf-outline and glabrousness is somewhat suggestive of *Timonius compressicaulis* (Miq.) Boerl. from Sumatra. It is readily distinguished by the shorter and fewer-flowered inflorescences and the more numerous pyrenes.

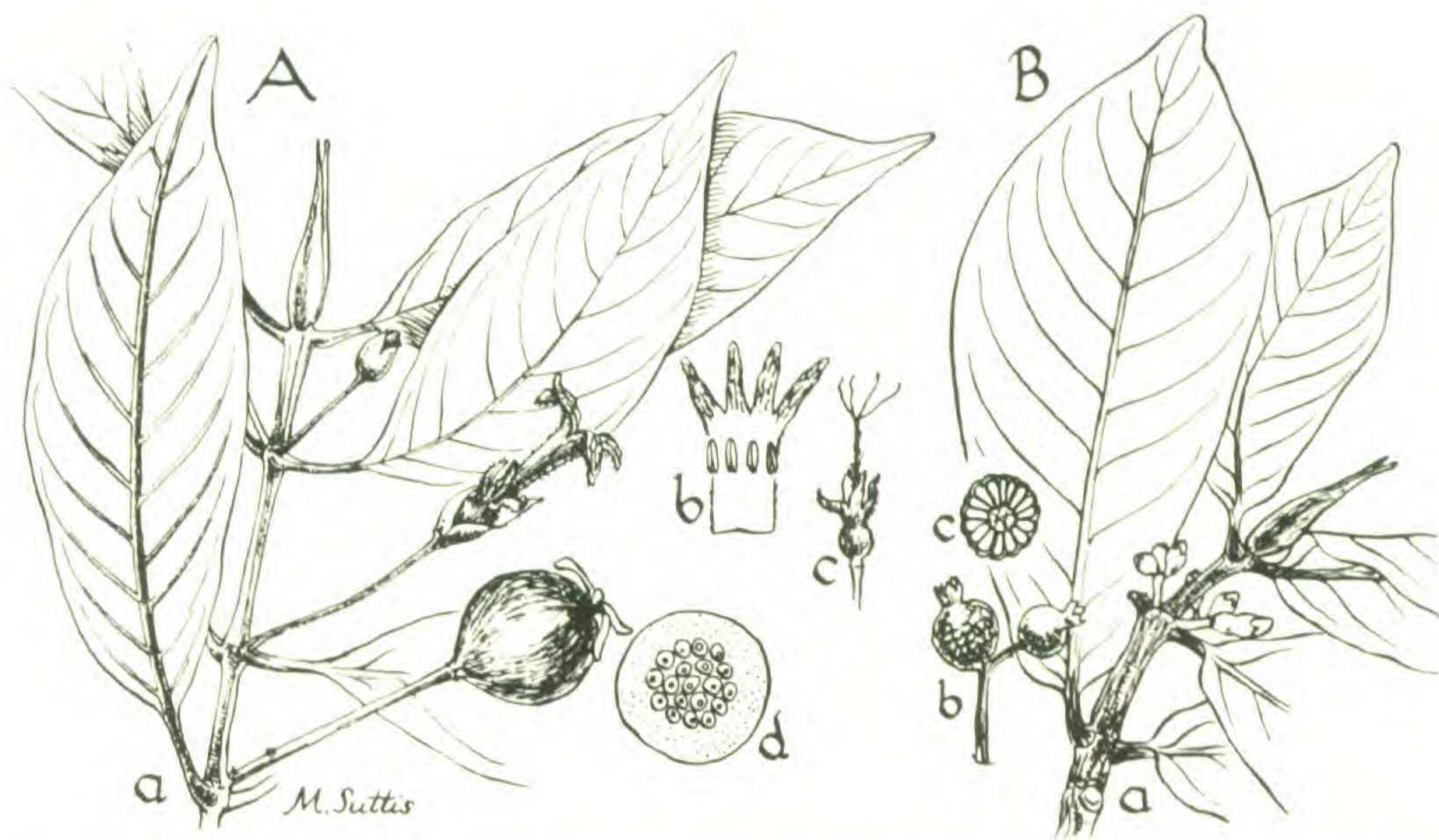


FIG. 5. A. *Timonius bracteatus* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. corolla, $\times \frac{1}{2}$, laid open; c. flower with corolla removed, $\times \frac{1}{2}$; d. cross-section of fruit, $\times \frac{1}{2}$. B. *Timonius nitens* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. infructescence, $\times \frac{1}{2}$; c. cross-section of fruit, $\times \frac{1}{2}$.

Another collection (*Brass 11748*, Balim River, Dec. 1938, alt. 1800 m.; tree 3–4 m. high scattered over open grassy slopes and common in sparse secondary forest) is an excellent match for this species except for the following characters: δ inflorescence profusely flowered, the calyx-lobes 2 mm. long, the corolla-tube about 8 mm. long, the lobes 3 mm. long. Whether these represent variations within a species we are not prepared to say. This is by far the best staminate collection of the group, but we preferred to describe matched material from the same locality, and apparently no similar pistillate material was collected from this locality.

Timonius imitans sp. nov. FIG. 6, B.

Arbor 23 m. alta; ramis atro-fuscis; internodiis 0.5–2 cm. longis, novellis compressis, internodio distali et alabastro terminali adpresse aureo-pubescentibus; stipulis 1–2 cm. longis, oblongo-lanceolatis, cito caducis; foliis 4–12 cm. longis, 2–5 cm. latis, lanceolatis vel anguste ellipticis, utrinque angustatis, apice acuminatis, acumine circiter 1 cm. longo, obtusiusculo, basi in petiolo 7–12 mm. longo angustatis, tenuiter coriaceis, utrinque glabris, nervis lateralibus utrinsecus 6–8 utrinque prominulis, oblique adscendentibus, venis et reticulo sub lente aequaliter manifestis, sub oculo inconspicuis; inflorescentiis ♂ axillaribus, ramosis, pedunculatis, pedunculo circiter 1 cm. longo, novellis aureo-puberulis cito corolla excepta glabratis; floribus confertis, paucis (5–7); calyce subcampanulato, novello apice leviter angustato, demum ut videtur fisso quasi inaequaliter 5-lobato, intus pubescente; corolla in alabastro tantum visa, 8 mm. longa, lobis 4; antheris 4; stylo glabro; disco hinc alto; inflorescentiis ♀ trifloris; floribus non visis; fructibus immaturis fere glabris, globosis, circiter 8 mm. diametro, apice calyce persistente coronatis; pyrenis numerosissimis, in fructu transverse secto 16, longitudinaliter ex apice ad basim circiter 10 compacte superpositis.

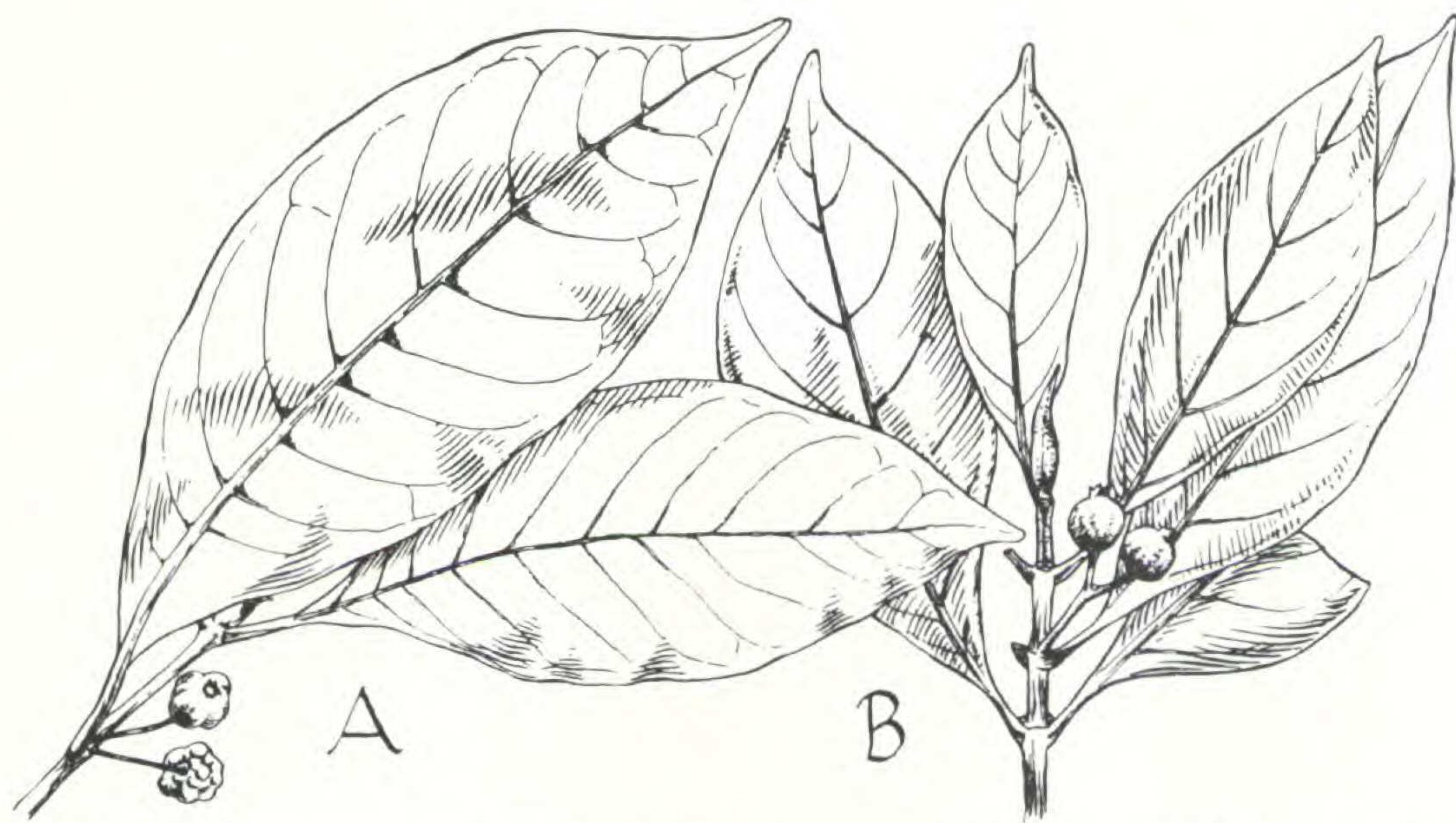


FIG. 6. A. *Timonius decipiens* Merr. & Perry: habit, $\times \frac{1}{2}$. B. *Timonius imitans* Merr. & Perry: habit, $\times \frac{1}{2}$.

NETHERLANDS NEW GUINEA: 6 km. southwest of Bernhard Camp, Idenburg River, Brass & Versteegh 12515 (TYPE), Feb. 1939, alt. 1500 m., frequent on forested slopes (tree 23 m. high, 40 cm. diameter; bark gray; fruits green).

Timonius imitans is most like *T. nitens*, described above. The leaves are different in outline, the former having a longer acuminate apex, and a longish cuneate base as if narrowed into the slender petiole; in the latter species the leaves are rounded or subtruncate at the base and have a short stout petiole. Both have similar terminal buds, but in *T. imitans* the distal node is pubescent also; in the other species, of which we have several collections, the distal node is glabrous. Unfortunately the staminate inflo-

rescences are not sufficiently developed in either for comparison; the fruits are very much alike.

Timonius decipiens sp. nov. FIG. 6, A.

Arbor parva; ramulis atro-cinereis; internodiis 0.7–3 cm. longis, novellis valde compressis, pubescentibus; stipulis 4–6 mm. longis, triangularibus, acuminatis, extus \pm pubescentibus, intus villosulis; foliis 7–13 cm. longis, 2.8–5.5 cm. latis, chartaceis, elliptico-lanceolatis vel oblongo-lanceolatis, apice breviter acuminatis, acumine 0.5–1 cm. longo, obtusiusculo, mucronato, basi anguste cuneatis, undique costa subtus sparsim adpresse pilosula excepta glabris, nervis lateralibus utrinsecus 8–10 oblique patentibus et arcuatis, supra manifestis, subtus vix prominulis in axillis barbellatis, venis et reticulo sub lente manifestis; petiolo 0.5–1.5 cm. longo, fere glabro; inflorescentiis non visis; fructibus pedunculatis, pedunculo 1.5–2 cm. longo, pubescente, minute et sparsim pubescentibus, depresso globosis, 1.2 cm. diametro, circiter 1 cm. longis, \pm 4-sulcatis, apice calyce persistente (tubo 1–1.5 mm. longo, lobis 4 circiter 1 mm. longis, triangularibus, acutiusculis, intus pubescentibus) extus sparsim pubescente coronatis; pyrenis 20–28, suboblique pendulis.

NORTHEAST NEW GUINEA: Yunzaing, *Clemens* 3984 (TYPE), Aug. 1936, alt. 1350 m., in forest (small tree with green fruit); Ogeramnang, *Clemens* 4502, alt. 1800 m., in forest.

Timonius decipiens is most like *T. flavescens* (Jack) Baker and *T. oblongus* Val. in general habit. The two last mentioned species have fruits with vertical pyrenes. In *T. flavescens* there is a very definite arrangement of the pyrenes within the pericarp, which is a distinguishing character. In *T. oblongus* the leaves are smaller and glabrous, but the main difference is in the number and arrangement of the pyrenes.

Timonius oblongus Val. Bot. Jahrb. 61: 49. 1927.

NETHERLANDS NEW GUINEA: 18 km. southwest of Bernhard Camp, Idenburg River, *Brass* 12497, Feb. 1939, alt. 2150 m., forest undergrowth of a gully (tree 2.5 m. high; unopened flowers red; fruit red, soft, depressed-globose, \pm 1.5 cm. diameter).

This specimen, although coming within the limits of the description of *Timonius oblongus* Val., differs from it in having red instead of white to golden-brown fruits. The flower-buds, although not yet open, are relatively large and approaching anthesis: peduncle 1.5–2 cm. long, very slender; bracts at the base of the ovary 2 mm. long, lance-linear, appressed-pilose; ovary about 2 mm. long, sparsely short-pilose; calyx-tube about the same length and 4-dentate, also appressed-pilose within; corolla (in bud) 11 mm. long, of which about 4 mm. belongs to the lobes, sparsely appressed-pubescent; anthers linear, 3 mm. long, attached about at the middle of the tube; style with 4 stigmatic lobes; a cross-section of the ovary shows 14 vertical "locelli" with an ovule in each.

Timonius bracteatus sp. nov. FIG. 5, A.

Arbor 8–11 m. alta; ramulis gracilibus, atro-brunnescentibus; internodiis 1–2 cm. longis, novellis valde compressis, adpresso-hirtellis cito glabratis; stipulis 1.5–2.5 cm. longis, attenuato-acuminatis, extus praecipue in medio minute pubescentibus, intus medio glandulosis et subvillosis, margine utrinque glabris; foliis chartaceis, lanceolatis, 6–15 cm. longis, 2–5.5 cm.

latis, apice acutis vel breviter et obtuse acuminatis, basi cuneatis, novellis utrinque sericeis, maturis fere glabris vel subtus pilis brevibus adpressis sparsim indutis, nervis lateralibus utrinsecus 9–11 supra manifestis, subtus prominulis, reticulo subobscuris, cuticula utrinque inconspicue et minute striulata; petiolo 0.8–2 cm. longo, \pm adpresse pubescente; inflorescentiis pedunculatis, juvenilibus involucri late ovato acutato-clauso inclusis, δ trifloris, sericeo-villosulis; calycis tubo 5 mm. longo, lobis 4, oblongis, 5–6 mm. longis; corollae tubo 1.5 cm. longo, lobis 1 cm. longis, oblongis, obtusis; antheris 5 mm. longis, apice tantum exsertis; stylo circiter 10 mm. longo, pilosulo; floribus η solitariis; pedunculo 2–3.5 cm. longo; calycis tubo 2 mm. longo, lobis \pm 5 mm. longis, oblongis; corollae tubo 1.5 cm. longo, lobis circiter 1 cm. longis; antheris in parte superiore tubi insertis, non exsertis, 5 mm. longis; stylo 1.5 cm. longo, pilosulo, gracili; stigmatibus 4, circiter 9 mm. longis, fere filamentosis; fructibus in sicco 2.5 cm. diametro, globosis, apice calycis lobis reflexis coronatis, adpresse pilosulis; sarcocarpio circiter 5 mm. crasso; pyrenis \pm 21, in medio fructu confertis, verticalibus.

NETHERLANDS NEW GUINEA: 15 km. southwest of Bernhard Camp, Idenburg River, Brass & Versteegh 11982, Jan. 1939, alt. 1790 m., occasional on slopes of primary forest (tree 11 m. tall, 39 cm. diameter; bark 2 mm. thick, brown, shallowly fissured; flowers white); same locality, Brass 12234 (TYPE), Jan. 1939, alt. 1700 m., rain-forest of ravines (substage tree 8 m. high; flowers cream-colored, fleshy; fruit hard, green, to 3 cm. diameter).

Although *Timonius bracteatus* looks like a very distinct species, from descriptions alone it is somewhat difficult to decide what species with vertical pyrenes may be most nearly related. *Timonius laevigatus* Val. has a fruit similar in size but lacks the long calyx-lobes characteristic of our species; there are also foliar differences. The vegetative characters suggest *T. subcoriaceus* Val., but the arrangement of the pyrenes immediately removes the species from that alliance.

Timonius xanthocarpus sp. nov. FIG. 7, B.

Arbor 4 m. alta; ramulis tomentosis; internodiis 1.5–2 cm. longis, ultimis compressis; stipulis circiter 1.3–1.7 cm. longis, lanceolatis, acuminatis, extus aureo-tomentosis, intus adpresse villosis, caducis; foliis ellipticis, 5.5–16 cm. longis, 2–6.5 cm. latis, utrinque angustatis, basi cuneato-obtusis, apice breviter acuminatis interdum mucronatis, valde coriaceis, supra glabris, costa nervisque hirtellis, subtus consperse hirtellis, costa nervisque breviter patenti-hirsutis vel hirtellis; nervis lateralibus utrinsecus 9–14 supra impressis, subtus prominentibus, venis interdum clathratis, irregulariter positae, supra impressis, subtus prominulis; petiolo 7–10 mm. longo, tomentuloso; floribus δ non visis; floribus η solitariis, pedunculatis, bracteatis, axillaribus, pedunculo 1–1.5 cm. longo, hirtello vel tomentuloso; bracteis 5–6 mm. longis, linearibus, hirtellis; ovario globoso, 4 mm. diametro, hirtello; calyce dense hirtello, tubo 2 mm. longo, lobis 4, 7–10 mm. longis, linearibus, circiter 10 mm. longis; antheris 4 mm. longis, dorso setuloso, in tubo medio insertis; stylo 8 mm. longo, hirtello, stigmatibus 4 terminato; fructibus ellipsoideis, immaturis, 1.5 cm. longis, 1.2 cm. latis, calycis lobis coronatis, hirtellis, obtuse 4-angulatis; pyrenis \pm 20 verticalibus.

NETHERLANDS NEW GUINEA: 15 km. southwest of Bernhard Camp, Idenburg River, Brass 12226 (TYPE), Jan. 1939, alt. 1750 m., open places in forest, not common (tree 4 m.

high; leaf-nerves deeply impressed above, prominent beneath; flower yellow; fruit immature, 4-ridged).

Timonius xanthocarpus should be compared with *T. Klossii* Wernham. From the description it seems to differ in the following points: *T. Klossii* has chartaceous leaves with a subacute apex and petiole scarcely 2 cm. long, and the stipules are sericeous toward the margin, otherwise glabrous. Wernham does not say whether the anthers are glabrous, or as in our species setulose on the back; this character ought to be the same whether in ♂ or in ♀ flowers. The pyrenes are cruciately arranged, as in *T. flavescens* (Jack) Baker, in the angles or lobes of the fruits, not in the center as described for *T. villosus* Val. from New Guinea. *Timonius xanthocarpus* is well marked by the coriaceous leaves with prominent venation, the yellow pubescence of the younger parts, the flowers, and the fruits, and the fairly large flowers with linear bracts at the base and with linear calyx-lobes; the hairs on the back of the anthers are not a common character in the species which we have examined.



FIG. 7. A. *Timonius strumarius* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. part of branch, $\times \frac{1}{2}$, showing stipules; c. ♂ inflorescence, $\times \frac{1}{2}$; d. corolla, $\times 1$, laid open; e. stamens, enlarged; f. cross-section of fruit, $\times \frac{1}{2}$. B. *Timonius xanthocarpus* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. flower, $\times \frac{1}{2}$; c. fruit, $\times \frac{1}{2}$; d. cross-section of fruit, $\times \frac{1}{2}$.

Timonius strumarius sp. nov. FIG. 7, A.

Arbor parva; ramulis teretibus brunnescentibus; internodiis novellis compressis, \pm sericeo-hirtellis, saepe sulcatis; stipulis 1–1.3 cm. longis, basi 5 mm. latis, acuminatis vel acutis, extus medio sericeo-hirtellis, intus medio adpresse villosulis et glandulosis, margine utrinque fere glabris, caducis; foliis ellipticis vel leviter obovato-ellipticis, 9–15 cm. longis, 4–6.5 cm. latis, apice subabrupte et breviter acuminatis, acumine usque 5 mm. longo, vel acutis, basi cuneatis, chartaceis, novellis utrinque dense adpresso-pilosis, cito glabratis, maturis supra brunnescentibus, fere glabris, subtus pallide olivaceis, sparsim (costa nervisque densius) pilosis; nervis lateralibus utrinsecus 8–11 oblique patentibus, venis inconspicuis; petiolo 0.7–1.8 cm.

longo, \pm piloso; inflorescentiis δ axillaribus pedunculatis, interdum ramosis, bracteatis, floribus sericeis, confertis, pedunculo 0.7–2 cm. longo, sericeo; calycis tubo 3 mm. longo, lobis 4–5 mm. longis, 1 mm. latis, corollae tubo 11 mm. longo (prope anthesin), lobis 5, circiter 4.5 mm. longis; antheris supra basim tubi 7 mm. insertis, dorso sparsim setuloso; stylo 6 mm. longo, pubescente; floribus η solitariis axillaribus, pedunculatis, bracteatis, sericeis; pedunculo 5–8 mm. longo; calycis tubo 1 mm. longo, lobis 3–4 mm. longis, 1–2 mm. latis; corolla 4- vel 5-lobata (alabastro tantum viso); staminibus in tubo medio insertis, antheris dorso setulosis; stylo hirtello, stigmatibus 4 (et uno brevior) terminato; fructibus depresso-globosis, 13 mm. diametro, fere glabris, calycis lobis reflexis et disco protuberante coronatis; pyrenis verticalibus 12–14, valde lignosis.

BRITISH NEW GUINEA: Lake Daviumbu, Middle Fly River, *Brass* 7742, Sept. 1936, common substage tree in inferior rain-forest (bark thin, suberose; leaf-nerves deeply impressed above, prominent below; flowers white); Gaima, Lower Fly River (east bank), *Brass* 8293 (TYPE), November 1936, edge of sago swamp in rain-forest (small tree 3 m. tall; leaf-nerves impressed above, prominent beneath; fruit up to 1.8 cm. diameter); same locality, *Brass* 8338, common in rain-forest and savanna-forest contact-zone (tree 5–6 m. high; bark brown, fibrous-flaky; flowers cream-colored).

This species is very close to *Timonius Branderhorstii* Val. We have separated the two on account of the differences in the fruit. In the plate of Valeton's species the lobes are longer and narrower than in the Brass collections and not at all strongly reflexed, nor is there any indication of the protrusion of the disk, a character well marked in the material before us. The fruit of Valeton's species is described as densely sericeous, but in our species only the young fruits of the type-collection are sericeous; in the more mature fruits most of the pubescence has disappeared except for a remnant on the calyx and disk.

Timonius bougainvillensis sp. nov. FIG. 8, B.

Arbor usque 15 m. alta; ramulis fuscis, gracilibus, internodiis 1–3 cm. longis, novellis glabris vel consperse hirtellis; stipulis 1.5–3.5 cm. longis, longe acuminatis, glabris, cito caducis; foliis oblango-lanceolatis, 3.5–9.5 cm. longis, 1.6–3 cm. latis, basi obtusis vel obtuse cuneatis, apice acuminatis et interdum mucronatis, utrinque glabris vel subtus costa sparsim hirtellis, valde chartaceis, nervis lateralibus utrinsecus 7–10 patenti-adscendentibus arcuatis, supra manifestis, subtus prominulis, reticulo inconspicuo, cuticula supra manifeste vel inconspicue lineato-striulata, subtus levi; petiolo 1–1.3 cm. longo, fusco; inflorescentiis δ non visis; floribus η solitariis vel interdum cymosis; pedunculo 7–11 mm. longo, glabro; bracteis subnullis; calyce tubulato, truncato, 2 mm. longo, glabro; corolla lobis extus sparsim pubescentibus exceptis glabra, in alabastro juvenili 8 mm. longa, lobis 6; staminibus 6; stylo brevi stigmatibus 12 terminato serie duplici superpositis, 6 quam reliquis longioribus; fructibus glabris, in sicco \pm 6 mm. diametro, apice calycis tubo coronatis; pyrenis in fructu longitudinaliter secto ex apice ad basim 8–9 compacte superpositis.

SOLOMON ISLANDS: Bougainville: Kupei Gold Field, *Kajewski* 1677 (TYPE), 1750, April 1930, alt. 900 m., rain-forest (trees up to 15 m. high; flowers white; fruit globular with a tubular end, 9 mm. long, 11 mm. diameter); Koniguru, Buin, *Kajewski* 2049, Aug. 1930, alt. 1000 m., rain-forest (epiphytic tree; flower white; fruit 7 mm. long, 1 cm. diameter).

This species tends to be almost entirely glabrous; the flower looks somewhat like that of *Timonius avenis* Val. except that the bud is shorter and stouter than in the latter species. The only pubescence that appears on the flower is at the apex of the bud, apparently on the corolla-lobes; the truncate calyx is not quite so short as in the New Guinean species; and of course the leaves with their definite venation at once set it apart as distinct. It may be allied to *T. appendiculatus* Merr., from the Philippines, but that species lacks the distinctly acuminate apex of the leaf.



FIG. 8. A. *Timonius novo-guineensis* Warb.: a. habit, $\times \frac{1}{2}$; b. ♀ inflorescence (young), $\times \frac{1}{2}$; c. infructescence, $\times \frac{1}{2}$. B. *Timonius bougainvillensis* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. fruit, $\times \frac{1}{2}$; c. longitudinal section of fruit, $\times \frac{1}{2}$.

Timonius Versteegii Val. Bull. Dép. Agr. Ind. Néerl. 26: 39. 1909, Nova Guin. Bot. 8: 475. 1911.

BRITISH NEW GUINEA: Palmer River, 2 miles below junction Black River, Brass 7026, June 1936, alt. 100 m., rain-forest undergrowth (small tree 3 m. tall; leaves flat, pale below; fruit large, red, costate, ovoid-globose, \pm 4 cm. long and 3.5 cm. diameter, solitary in axils).

There can be scarcely any doubt that this is the species previously reported from Netherlands New Guinea. The only variation we see from the description is in the slightly more slender calyx-lobes crowning the fruit (lobes 2.5 cm. \times 3 mm.); the peduncle supporting it is 6 mm. long; the fruit contains about 19 pyrenes vertically arranged.

Timonius Roemeri Val. Nova Guin. Bot. 8: 476. 1911.

NETHERLANDS NEW GUINEA: Nabire, Kanehira & Hatusima 11515, Feb. 1940, on the edge of high rain-forest (plant 5 m. high; fruit white).

This specimen has only a fruit and two leaves with stipules at the apex of the stem. The bracts are 4 cm. long, appressed-pilose within, and the upper margin is frayed and broken; they do not entirely cover the fruit. The latter is globose, 4 cm. in diameter, crowned by 8 strongly reflexed

calyx-lobes about 2 cm. long; the pyrenes are obliquely arranged in series; outside of the pyrenes the epicarp is about 5 mm. thick.

Timonius rivularis sp. nov. FIG. 9, A.

Arbor usque 16 m. alta; ramulis sulcatis, glabris, internodiis 0.7–2.5 cm. longis; stipulis 2–4 cm. longis, sensim attenuatis, extus sericeo-pilosis, cito caducis; foliis lanceolatis, 11–18 cm. longis, 3–5 cm. latis, basi et apice acuminatis, chartaceis, supra glabris vel utrinque consperse (subtus costa et venis densius) adpresse pilosis, nervis lateralibus in axillis barbellatis, utrinsecus 12 vel 13 supra manifestis, subtus prominulis, adscendentibus, reticulo supra inconspicuo, subtus sub lente distincto, in areolis parallelo-lineatis; petiolo 1–2 cm. longo, sparsim piloso, cito glabrato; inflorescentiis ♂ tantum visis, 2–5(–7)-floris, axillaribus, pedunculatis, pedunculo 2–2.5 cm. longo, glabro, semel dichotomis, ramis 1–1.5 cm. longis, adscendentibus, floribus sessilibus; calyce tubulato, 7 mm. longo, extus consperse intus densius pubescente; corollae tubo sericeo, 1.5 cm. longo, lobis 5, oblongis, 7 mm. longis, extus sericeis; staminibus 5 in parte superiore tubi insertis, 6 mm. longis, inclusis; stylo 6 mm. longo, glabro.

BRITISH NEW GUINEA: Palmer River, 2 miles below junction Black River, *Brass* 7252 (TYPE), July 1936, alt. 100 m., plentiful in older seral forests on the sandy river-banks (tree attaining 15–16 m.; leaves thin, flat, with conspicuous lateral nerves; flowers white).



FIG. 9. A. *Timonius rivularis* Merr. & Perry: a. habit, $\times \frac{1}{2}$; b. enlarged portion of leaf showing detail of venation. B. *Timonius melanophloeus* Merr. & Perry: habit, $\times \frac{1}{2}$.

None of the species described, except *Timonius Timon* (Spreng.) Merr. (which has definite calyx-lobes), seems to be greatly like this collection. It is readily distinguished by the truncate and almost glabrous calyx, the long slender leaves with fairly numerous ascending nerves, and the very fine hairs which appear on the younger parts, but mostly soon disappear. The venation of the lower leaf-surface shows a definite pattern.

Timonius melanophloeus sp. nov. FIG. 9, B.

Frutex 1 m. altus; caulibus pluribus, teretibus, atro-purpureis; ramulis

fuscis adpresse pubescentibus, internodiis 1–3.5 cm. longis, novellis compressis; stipulis 4 mm. longis, ovatis, acutis vel acuminatis, extus sericeis, intus villosulis; foliis 4–8 cm. longis, 1–2.5 cm. latis, lanceolatis, basi rotundato-cuneatis, apice sensim longe acuminatis, coriaceis, supra costa puberula excepta glabris, subtus consperse puberulis, costa densius pubescente, nervis lateralibus utrinsecus 7–9 utrinque aequaliter manifestis, patenti-adscendentibus et arcuatis, reticulo utrinque manifesto; petiolo 3–5 mm. longo, pubescente; inflorescentiis ♂ tantum visis, pedunculatis, pedunculo 1.5–3 cm. longo, \pm puberulo, trifloris; floribus sericeis, medio sessile, lateralibus pedicellatis, pedicello 3 mm. longo; calycis tubo 1 mm. longo, lobis 4, ovatis, 1 mm. longis; corollae tubo 8 mm. longo, 1 mm. diametro, lobis 3 mm. longis, 4, oblongis; staminibus 3.5 mm. longis in parte superiore tubi insertis; stylo glabro brevi.

SOLOMON ISLANDS: Ysabel: Cape Prieto, *Brass* 3475 (TYPE), Jan. 1933, alt. 200 m., open sun-parched slopes, common (shrub or bush 1 m. high; stems several from a thick woody base; bark dark purple; flowers cream-colored).

Perhaps the species is to be related to *Timonius subsessilis* Val. of Netherlands New Guinea, but the latter has larger and entirely glabrous leaves. This collection seems to be best characterized by the very dark bark of the branchlets, which tend to have a cinereous appearance on account of the very fine pubescence covering them; the stipules are usually present on the last two nodes; the flowers are very slender, and the leaves are fairly small as well as conspicuously acuminate.

Timonius densiflorus Val. Bot. Jahrb. 61: 39. 1927.

BRITISH NEW GUINEA: Iaritari, *Brass* 707, November 1925, alt. 450 m., foothill-forest stream (small compact tree about 4.5 m. tall, with green fruit).

Vegetatively this collection agrees very well with that of an isotype of *Timonius densiflorus* Val. This is the ♀ plant with infructescences pedunculate (peduncles about 1.5 cm. long) and once or twice dichotomous in the upper axils; fruits globose, \pm 6 mm. in diameter, crowned by the remnants of the calyx-lobes; pyrenes in about 16 rows, obliquely pendulous from the apex of the fruit.

Timonius kaniensis Val. Bot. Jahrb. 61: 42. 1927. FIG. 10.

NETHERLANDS NEW GUINEA: Hollandia, *Brass* 8842, June 1938, alt. 50 m., rain-forest substage (tree 15 m. tall; leaf-nerves prominent beneath); Bernhard Camp, Idenburg River, *Brass* 13894, April 1939, alt. 120 m., rain-forest of lower mountain-slopes (subsidiary tree 15 m. high; flowers white).

After preparing a description for these collections we have decided that they fall too near *Timonius kaniensis* Val. to be kept separate, at least until one has an opportunity to examine an isotype, if one should be extant. The shape of the leaves is more like that given for *T. latifolius* Lauterb. & K. Schum., where the leaves are somewhat abruptly narrowed toward the base and truncate or subcordate at the very base; however, they are about the same size as those described for *T. kaniensis* Val. Furthermore, the inflorescence is bracteate, on a short peduncle, and has very short branches. Our specimens are not in similar stages for comparison, the type being a ♀ plant with young flower-buds. *Brass* 8842 is a ♀ plant with fruit and one dried corolla attached, and the other collection is a ♂ plant with the inflo-

rescences mostly in young bud. We add the following data from the material at hand: ♀ inflorescence twice dichotomous; corolla outside appressed-sericeous, the tube 6 mm. long, the lobes 7, oblong, about 4 mm. long; anthers inserted near the middle of the tube; style 6–7 mm. long, pubescent; stigmas partly broken; fruit hirsute, depressed-globose, about 9 mm. diameter, crowned by 4 or 5 calyx-lobes which are about 5 mm. long; the pyrenes are numerous, obliquely pendulous; in a median longitudinal section of the fruit on either side are ± 6 pyrenes compactly superposed from the apex to the base of the fruit. The staminate inflorescence is branched but the branches are short and the flowers crowded, the same tomentulose or somewhat hirtellous pubescence is present on the outside of the bracts and flowers as in the ♀ inflorescence. The bracts are oblong-ovate or ovate, 4–6 mm. long, and subtend the branches as well as each individual flower; calyx-tube 1.5–2 mm. long, the lobes 4, ovate, acutish, 1.5–2 mm. long; corolla-tube 4.5 mm. long, the lobes 4, oblong, 2.5 mm. long, the anthers

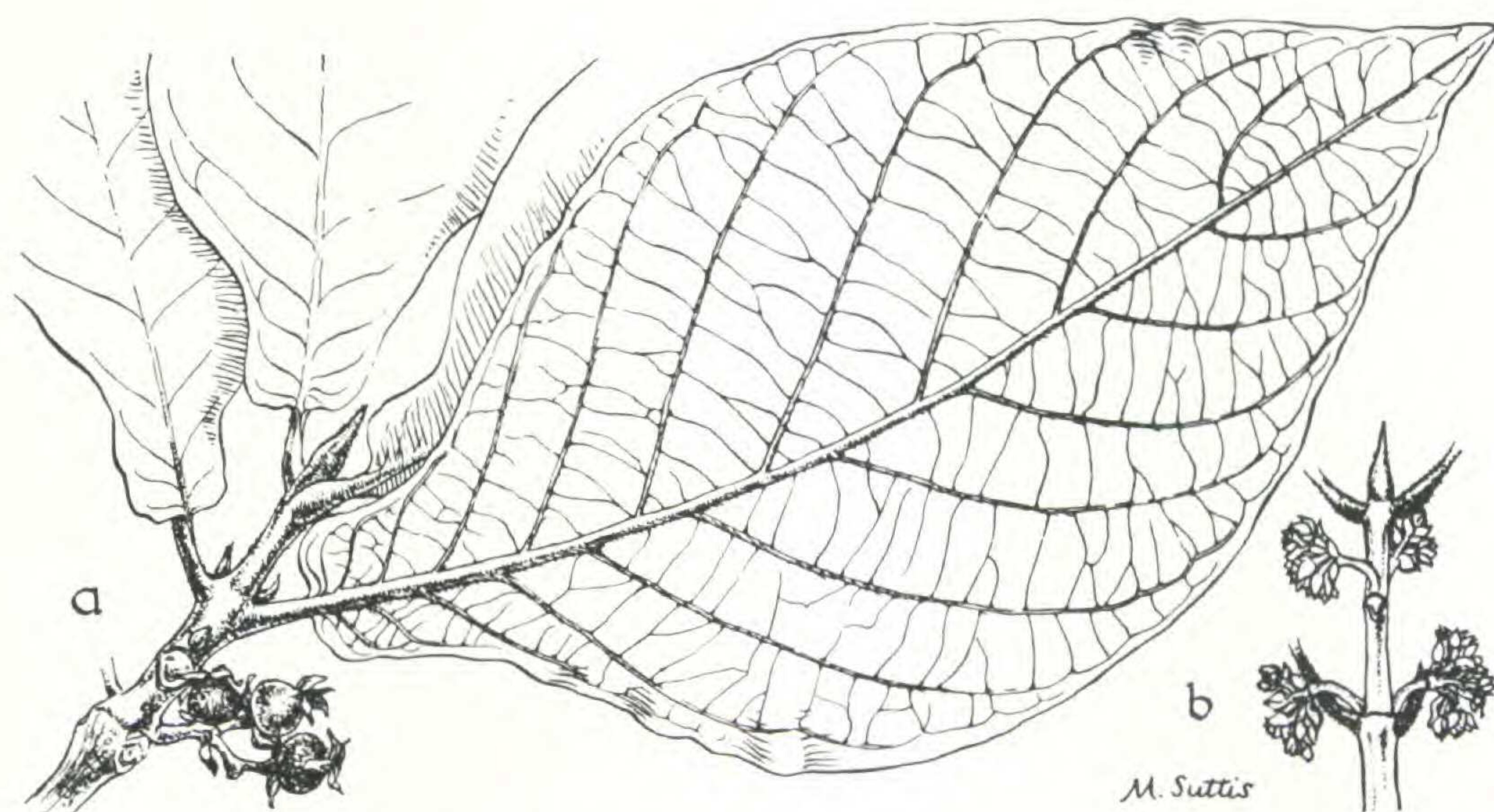


FIG. 10. *Timonius kaniensis* Val.: a. habit, $\times \frac{1}{2}$; b. portion of branch showing ♂ inflorescence, $\times \frac{1}{2}$.

3 mm. long, the apex barely exerted; style short, pubescent. Most of the flowers are in young bud. The ♂ inflorescence very closely resembles that of *T. oblanceolatus* Val., but in the latter the bracts are more quickly deciduous, and the pubescence is of appressed short stiffish hairs rather than spreading in all directions as in our collections. The base of the leaf is different too, but this holds only as to the specimens cited, not as to the two descriptions. We are fortunate to have at hand an isotype of *T. oblanceolatus* Val.

Timonius novo-guineensis Warb. Bot. Jahrb. 13: 434. 1891; Schumann & Lauterb. Fl. Deutsch. Schutzgeb. Südsee 567. 1900; Val. Bot. Jahrb. 61: 47. 1927. FIG. 8, A.

NETHERLANDS NEW GUINEA: Hollandia, Brass 8896, 8897, June 1938, alt. 10–20 m., in seral shrubberies, plentiful in gravel-beds of river (shrub usually with several stems, erect to 2.5–3 m.; leaves smooth and shining; flower-buds white).

The flowers of both staminate and pistillate plants are immature, as are also the fruits. In the collections cited the leaves are not so definitely acuminate as in the isotype, and they are somewhat more coriaceous; the plants also are not quite so pubescent, but these are all minor differences and are noted here to indicate the variation.

Timonius jobiensis Wernh. Jour. Bot. 56: 131. 1918.

NETHERLANDS NEW GUINEA: Roemberpon Island, 60 miles south of Manoekwari, *Kanehira & Hatusima* 13299, March 1940, in rocky strand-forest (plant 3 m. tall; flower white).

The type was collected on the island of Japen (Jobi). Previously known only from the type collection.

Mastixiodendron Melchior

In Jour. Arnold Arb. 23: 416. 1942, we called attention to the fact that *Mastixiodendron* Melchior belongs to the Rubiaceae rather than to the Cornaceae. Not long ago we were checking *Blumea* for some other information, and a paragraph on the genus *Mastixiodendron* caught our eye. At once we realized that here was an overlooked item. Danser, in his monograph of the Cornaceae of the Netherlands Indies (*Blumea* 1: 69. 1934), apparently anticipating the occurrence of the genus in that region, had already pointed out that *Mastixiodendron* belongs not to the Cornaceae but to the Rubiaceae. He suggested that Melchior had been misled by the choripetalous corolla and then said that he had been unable to ascertain to his satisfaction whether the corolla was choripetalous or not. In the material of two species which we have at hand the corolla-lobes are thick and stiff, the bud is practically square at the base, and in the open flowers of these the petals appear to be separate. In the third species, which has oblong buds, the petals are obviously separate to the base. *Mastixiodendron* has now been found in Halmahera, all three parts of New Guinea, the adjacent island of Japen, Banika in the Russell group of islands in the Solomon Islands, and in Fiji (see A. C. Smith in Jour. Arnold Arb. 26: 108–110. 1945).

Mastixiodendron Stoddardii sp. nov.

Verisimiliter arbor; cortice griseo-brunnescente longitudinaliter ruguloso; ramis teretibus, novellis compressis, glabris; foliis ellipticis, 12.5–17 cm. longis, 5–7 cm. latis, chartaceis vel tenuiter coriaceis, utrinque angustatis, apice obtusiusculis vel brevissime et obtuse acuminatis, basi cuneatis et in petiolum breviter decurrentibus, in sicco fuscis vel olivaceis plerumque subtus pallidioribus, glabris, costa supra interdum anguste canaliculata, subtus prominente, nervis lateralibus utrinsecus \pm 17 utrinque prominulis patentibus prope marginem anastomosantibus, reticulo venularum utrinque manifesto; petiolo 2–3 cm. longo; stipulis oblongo-lanceolatis, 1.3–2 cm. longis, cito caducis; inflorescentiis in axillis foliorum summorum dispositis, 9 cm. longis, cymo-paniculatis; pedunculo et ramis glabris, pedunculo \pm 4 cm., ramis circiter 2.5 cm. (summis 1 cm.) longis; pedicellis 3 mm. longis, minute puberulis vel glabris; bracteis minutis cito caducis; alabastro ovoideo, 4-angulato; calycis lobis 4, circiter 1 mm. longis, triangularibus, acutis; petalis 4, in sicco 4 mm. longis, 2.5 mm. latis, ovatis, obtusiusculis,

extus glabris, intus dense pubescentibus, pilis longis crassiusculis, crispule intertextis; staminibus 2 mm. longis, 4, filamentis apicem versus leviter attenuatis; ovario 1–1.5 mm. longo, depresso, obtuse 4-angulato, stylo 1 mm. longo.

SOLOMON ISLANDS: Russell group: Banika, *Stoddard 12* (TYPE) (received at A. A. Aug. 1944). Three collections from NETHERLANDS NEW GUINEA (Bernhard Camp, Idenburg River, *Brass & Versteegh 13563*, alt. 225 m., and 2 km. southwest of Bernhard Camp, *Brass & Versteegh 13502*, alt. 800 m., rain-forest; Japen Island, *Neth. Ind. For. Serv. bb.30355*) are either conspecific or closely related.

The New Guinean material differs from the Banika Island collection in having stiffer leaves, with a more definitely marked obtuse acumen, and a more obviously reticulate upper surface. The latter may be due to an inherent difference in the plants or it may possibly be owing to different methods of drying. None of the New Guinean material is sufficiently advanced in the flowering stage to show anything of the inflorescence. The fruits on the specimens are abnormal because of insect damage, but they show a fairly definite pattern in cross-section; there is much less fibrous tissue in the pericarp of these than in the fruits of *Mastixiodendron Smithii* described below, and more cancellate tissue; the apex of the fruit is at most convex, not prominently protruding as in the other New Guinean species. The flower of *M. Stoddardii* is very like that of *M. pachycladon* (K. Schum.) Melch., but the former is readily distinguished by its smaller and obtusely acuminate leaves. It somewhat resembles the Fijian material (here again the leaves are obtuse), but the latter is readily distinguished by the papillate rather than pubescent upper surface of the petals.

Named for the collector, Lieut. C. H. Stoddard of the U. S. Navy.

***Mastixiodendron Smithii* sp. nov.**

Arbor 20 m. et ultra; cortice brunnescente vel cinereo, longitudinaliter ruguloso; ramis teretibus, novellis valde compressis, glabris; foliis ellipticis vel leviter obovatis, 9–21 cm. longis, 4.5–10 cm. latis, supra medium latissimis, apice breviter et obtuse acuminatis, acumine 3–5 mm. longo, basi elongato-cuneatis, in sicco brunnescentibus vel subtus olivaceis, glabris, subnitidulis, costa supra plana, subtus prominente, nervis lateralibus utrinsecus 10–14 utrinque prominulis prope marginem anastomosantibus, venulis manifestis non prominulis; petiolo 2–3 cm. longo; stipulis 1.5–2.5 cm. longis, oblongo-lanceolatis, cito caducis; inflorescentiis in axillis foliorum summorum dispositis, \pm 13 cm. longis latisque, paniculatis; ramis valde divaricatis, infimis 3 cm. longis, pedunculo 4 cm. longo, pedicellis 3–4 mm. longis; bracteis minutis, caducis; alabastro oblongo, 7 mm. longo; ovario et calyce vix 3 mm. longo, glabro, calyce 4-dentato, dentibus triangularibus vix 1 mm. longis, acutis; petalis 4 liberis, 5 mm. longis, extus puberulis, intus fere basim pilosis, prope medium pilis longioribus; staminibus 4 mm. longis; disco 1.5 mm. longo, minute puberulo; stylo 2 mm. longo, glabro; fructibus ellipsoideis, 4–4.5 cm. longis, 2 cm. diametro, apice disco coronatis, 2-locularibus; pericarpio fibroso hinc inde cancellato.

NETHERLANDS NEW GUINEA: 6 km. southwest of Bernhard Camp, Idenburg River, *Brass & Versteegh 12517*, Feb. 1939, alt. 1200 m., occasional in primary forest (tree 32 m. tall, 61 cm. diameter; bark black, fairly smooth; wood yellow; fruit green). NORTHEAST NEW GUINEA: Yunzaing, *Clemens 3723*, July 1936, alt. about 1500 m.,

hill in forest (tree 19–22 m. tall; fruit gray-green); Ogeramnang, *Clemens 5154* (TYPE), Jan. 1937, alt. about 1750 m.

Named for Dr. A. C. Smith, because of his special interest in and work on this genus.

The fruit of this species differs from that of *Mastixiodendron pachycladon* (K. Schum.) Melch. in that it is very much larger and has a much thicker and fibrous pericarp with here and there what appears to be aëri-ferous tissue. The fruit is more or less pointed at both ends rather than rounded as in Melchior's species. Then too the leaves have a very short obtuse acumen, whereas in *M. pachycladon* the leaves are broadly rounded at the apex. *Mastixiodendron Stoddardii* Merr. & Perry may be readily distinguished by the smaller leaves, the ovoid rather than oblong flower-buds, and the smaller fruits, but it is to be noted that in the New Guinean material of that species, or a closely allied one, the fruits also have a pericarp with cancellate tissue.

Coffea Linnaeus

With no good material of *Coffea* (*Lachnostoma*) in our herbaria for study or comparison, and with three species described from New Guinea transferred to some other genus or left in an uncertain position, we hesitate even to try to name the material at hand. Temporarily we are disposing of it thus:

Coffea apoda (Val.) Bremekamp, Bull. Jard. Bot. Buitenz. III. 16: 276. 1940; vel aff. *Ixora apoda* Val. Ic. Bogor. 4: t. 341. 1912.

NETHERLANDS NEW GUINEA: 6 km. southwest of Bernhard Camp, Idenburg River, *Brass 12821, 13026*, Feb. 1939, alt. 1200 and 1250 m., rain-forest undergrowth, rare (shrub 1 m. high; calyx-lobes red; corolla white).

Described from Obi Island; the New Guinean collections, if not identical, are too close to be separated without material for comparison.

Coffea (*Lachnostoma*) ?

BRITISH NEW GUINEA: Baroka, Makeo District, *Brass 3743*, April 1933, alt. 30 m., brushy rain-forest (abundant shrub of somewhat scandent habit; foliage dull green; fruit immature); Rouna, *Carr 12389*, May 1935, alt. about 450 m., brink of stream in very steep hill-forest (tree about 1.8 m. tall; fruit black-purple); Kanosia, *Carr 11220*, Feb. 1935, alt. about 15 m., secondary forest (tree about 2 m. tall).

In this material the fruit seems to be terminal on short lateral branches. There is a strong resemblance to the plate of *Coffea madurensis* Teysm. & Binn. in *Teysmannia* 11: 31. 1900. The general habit suggests *C. bengalensis* Roxb., and strangely enough we found the latter species recorded from Sunday Island [Torres Strait]. We believe the whole group is in need of detailed and careful study.

Ixora Linnaeus

With the aid of Bremekamp's excellent work on the genus *Ixora* Linn., we have placed our unnamed collections with considerable ease. We note here two new species and the extension of the range of *I. Kerstingii* Lauterb. & K. Schum. from Northeast and Netherlands New Guinea into British New Guinea.

Ixora Kerstingii Lauterb. & K. Schum. in K. Schum. & Lauterb. Fl. Deutsch. Schutzgeb. Südsee 571. 1900; Brem. Bull. Jard. Bot. Buitenz. III. 14: 305. 1937.

NETHERLANDS NEW GUINEA: Bernhard Camp, Idenburg River, *Brass* 13830, Apr. 1939, alt. 150 m., rain-forest of lower mountain-slopes (undergrowth tree 3 m. high; flowers white). BRITISH NEW GUINEA: Kubuna, *Brass* 5623, Nov. 1933, alt. 100 m., rare in rain-forest undergrowth (bush about 2 m. tall; pendent panicles with pale yellow flowers).

Ixora cordata sp. nov.

Arbor 4–6 m. alta; ramis brunnescentibus, teretibus vel compressis, internodiis 3–8 cm. longis; petiolo 3–5 mm. longo, crassiusculo; foliis chartaceis vel tenuiter coriaceis, oblongo-lanceolatis, 12.5–19 cm. longis, 4.5–6.5 cm. latis, apice acutis vel acuminatis, basi cordatis, nervis lateralibus utrinsecus 9–11 utrinque prominulis, venulis utrinque manifestis, reticulo laxo supra manifesto, subtus inconspicue manifesto; stipulis brevibus, ovatis, arista quam vagina brevior munitis, intus parte inferiore pilosis; inflorescentiis terminalibus, multifloris; axi, ramis et pedicellis puberulis; pedunculo 4–7 cm. longo; axi inflorescentiae \pm 10 cm. longo, internodio infimo 3–6 cm. longo; ramis infimis oppositis, circiter 7 cm. longis, divaricatis; pedicellis 2–4 mm. longis; bracteis infimis anguste lanceolatis, 5 mm. longis; bracteolis filiformibus inconspicuis; ovario et calyce 2 mm. longo; calyce minute lobato; corollae tubo 8 mm. longo, fauce glabro, lobis 6–7 mm. longis, 3 mm. latis, obtusiusculis; filamentis 2 mm. longis, antheris 5 mm. longis, mucronatis; stylo 10 mm. longo secus medium sparsim piloso; stigmatibus 3 mm. longis; fructibus depresso globosis, 7 mm. longis, 9 mm. diametro.

NETHERLANDS NEW GUINEA: 6 km. southwest of Bernhard Camp, Idenburg River, *Brass* 12860 (TYPE), Feb. 1939, alt. 1200 m., common on rain-forest slopes (tree 4–6 m. high; flowers pink; peduncles and pedicels red; fruit red); 2 km. southwest of Bernhard Camp, Idenburg River, *Brass* 13613, Mar. 1939, alt. 700 m., common in rain-forest undergrowth (tree 4–5 m. high; fruit red).

In general aspect this species resembles *Ixora amplexifolia* K. Schum. & Lauterb., but there are several differences. The reduced leaves near the base of the peduncle are lacking; even in fruit the ultimate branchlets and pedicels are puberulent or minutely spreading-pubescent; the flowers are smaller and more numerous at the apices of the branches than in the specimens we have of the earlier species; and also the lobes of the calyx are scarcely at all marked in our species, but perfectly obvious in the related one. The leaves in the second specimen cited are a little larger (23–34 \times 6–10 cm.) than in the type collection and more deeply cordate; the fruit is smaller (fruiting specimen only), but in neither is the fruit ripe.

Ixora ensifolia sp. nov.

Frutex 1 m. altus, pauciramosus; ramis gracilibus circiter 1.5 mm. diametro, cortice griseo vel pallide brunneo; foliis sessilibus (petiolo vix 1 mm. longo), chartaceis, linearibus vel subensiformibus, 20–31 cm. longis, 1.2–1.5 cm. latis, apice sensim angustatis, acuminatis, basi auriculatis, supra subnitidulis, nervis lateralibus supra prominulis utrinsecus \pm 35, tamen sicut venulis laxo reticulatis (subtus tantum manifestis) supra prominulis; stipulis 5–10 mm. longis, ovatis et longe aristatis, axilla pilosis; inflorescentiis pendentibus terminalibus, laxo paniculatis, e floribus \pm 25 compositis; pedunculo \pm 16 cm. longo, 2 mm. supra basim bracteis 9 mm. longis vel foliis rudimentariis munito; axi inflorescentiae ad minimum 15 cm. longo,

ramis infimis \pm 12 cm. longis, oppositis, divaricatis, superioribus brevioribus et plerumque suboppositis; pedicellis \pm 1.5 cm. longis; bracteis lanceolatis 2–2.5 mm. longis; bracteolis vix 1 mm. longis, ab ovario remotis; ovario 1.5 mm. longo, glabro; calyce vix 1 mm. longo, lobis late ovatis; corollae tubo 4 mm. longo, fauce glabro; lobis 9 mm. longis, 1.5 mm. latis, acutis; filamentis 2 mm. longis, antheris 8 mm. longis, aristatis, basi profunde fissis; stylo (parte inclusa pilosa 1 mm. supra basim excepta) 7 mm. longo, stigmatibus 2 mm. longis.

BRITISH NEW GUINEA: Dieni, Ononge Road, *Brass* 3941 (TYPE), May 1933, alt. 500 m., common in rain-forest (shrub about 1 m. high with a few slender spreading branches; panicles pendent; petals green in bud; peduncle and pedicels reddish).

The plant appears to belong to *Ixora* sect. *Macropus* Brem. and is related to *I. leptopus* Brem., if we have correctly interpreted the latter species. Both seem to have the same type of inflorescence. The species is readily distinguished by the long slender auriculate subensiform sessile leaves and the very open inflorescence.

Versteegia Valetton

Versteegia aff. *cauliflora* (Lauterb. & K. Schum.) Val. Nova Guin. Bot. 8: 484. 1911, in nota.

Psychotria cauliflora Lauterb. & K. Schum. in K. Schum. & Lauterb. Fl. Deutsch. Schutzgeb. Südsee 574. 1900.

BRITISH NEW GUINEA: Palmer River, 2 miles below junction Black River, *Brass* 7065, June 1936, alt. 100 m., ridge-forest undergrowth (small tree 4 m. high, with soft glabrous leaves; fruit red, compressed-globose, 4 cm. diameter, solitary on trunk below the branches).

This genus as known at present consists of two described species and a third very briefly set forth in a key. The present collection has leaves with longer petioles and depressed-globose fruits in contrast to the short petioles and ovoid fruits of *Versteegia cauliflora* (Lauterb. & K. Schum.) Val. However, since we have only a single specimen with a single fruit, it seems unwise to try to carry the determination further.

Coprosma J. R. & G. Forster

Even with the aid of Oliver's recent monograph on the genus *Coprosma* we have found it difficult to dispose satisfactorily of the collections at hand. With flowers so much alike, the question of distinguishing intrinsic characters from differences brought about by variation in habitat has constantly bothered us. However, for purposes of distribution we have assigned the species as best we can, leaving their ultimate disposition for the specialist. The following key will show at a glance what we have taken to be good characters:

- Corolla tubular; flowers solitary, terminal; plant prostrate.....*C. Archboldiana*.
- Corolla campanulate; flowers solitary or clustered; upright shrubs.
 - Leaves obtuse.....*C. divergens*.
 - Leaves acute or cuspidate.
 - Branches and stipules entirely glabrous.
 - Leaves mostly ternate, glabrous.....*C. papuensis*.
 - Leaves opposite, the midrib beneath sparsely hirtellous.....*C. Wollastonii*.

- Branchlets pubescent; stipules pubescent or glabrous with a thick margin of hairs.
 Leaves mostly ternate; stipules with processes 1–2 mm. long and glandular at the apex.....*C. Brassii*.
 Leaves opposite; stipules dentate, the teeth apparently being glands along the margin.
 Stipules pubescent outside; midrib of leaves sparsely hirtellous beneath.
 Leaves smaller, 9–12 × 3–3.5 mm.....*C. Lamiana*.
 Leaves larger, 16–35 × 3–8 mm.....*C. habbemensis*.
 Stipules glabrous with a thick margin of hairs; leaves glabrous.....
*C. novoguineensis*.

Coprosma divergens Oliver, Records Dominion Museum [N. Zeal.] 1: 44. 1942.

Brass collected two numbers (4215 and 4216) of this species, one ♂, the other ♀; it would seem that the numbers were mixed when duplicates were distributed, as no. 4216 in the Arnold Arboretum set is from a ♂ plant. However, the two are so much alike that the only difference we can see is that one has stamens where the other has styles, the calyx and corolla being alike in the two plants.

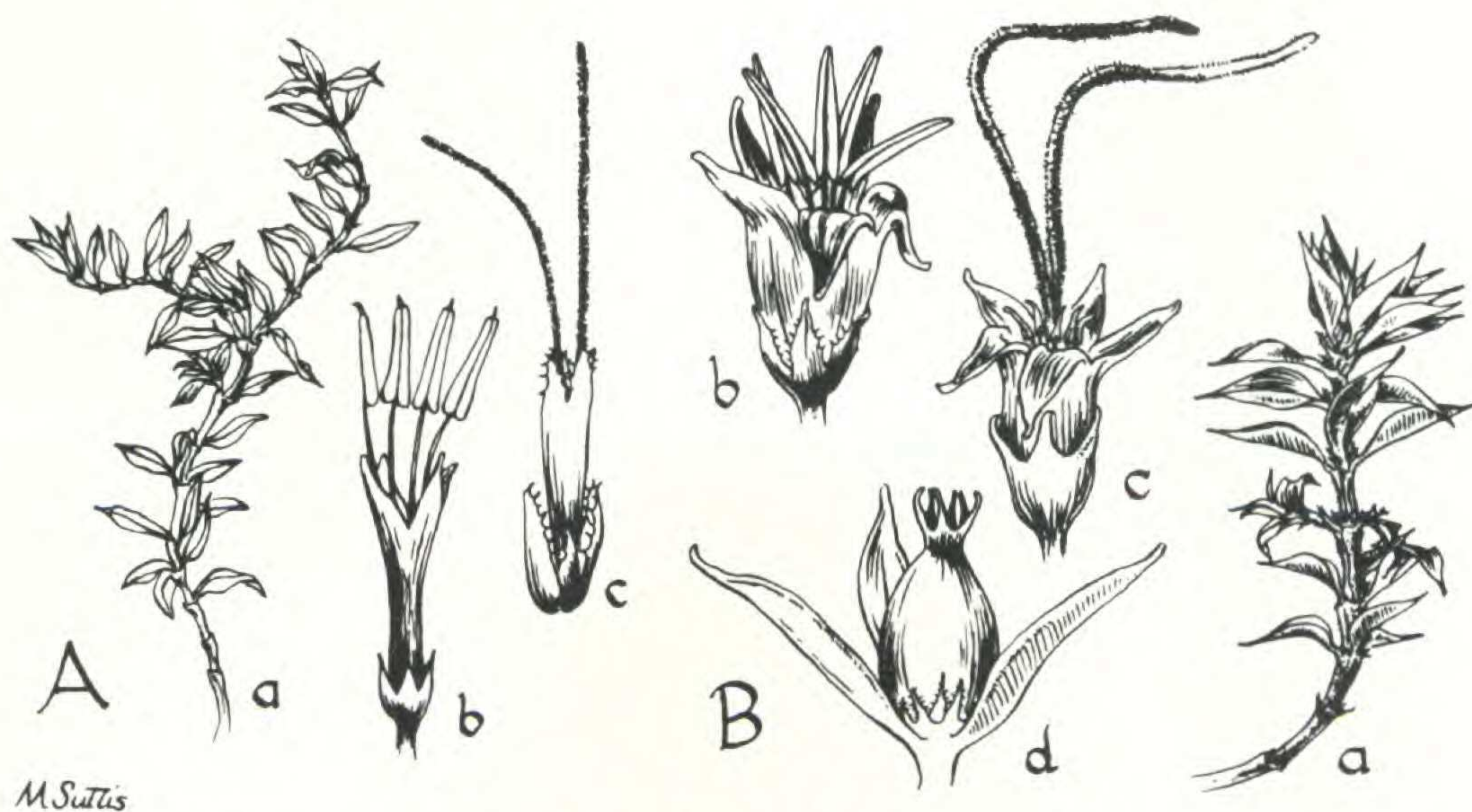


FIG. 11. A. *Coprosma Archboldiana* Merr. & Perry: a. habit, × ½; b. ♂ flower, × 2½; c. ♀ flower, × 2½. B. *Coprosma Brassii* Merr. & Perry: a. habit, × ½; b. ♂ flower, × 2½; c. ♀ flower, × 2½; d. fruit, × 2½.

Coprosma Archboldiana sp. nov. FIG. 11, A.

Frutex prostratus; caulibus minute hirtellis vel glabris, ramosis; internodiis 4–10 mm. longis; foliis oppositis, lineari-lanceolatis, 0.6–1 cm. longis, 2.5–3 mm. latis, apice acutis, basi in petiolo marginato 1–3 mm. longo fere 1 mm. lato angustatis, margine consperse ciliatis, pilis brevibus, utrinque glabris minute rugulosis, costa tantum manifesta; stipulis cum petiolorum basibus connatis, vaginantibus, margine minute dentatis, ciliatis; floribus sessilibus terminalibus; ♂ : calyce brevi, inaequaliter 4-dentato, minute ciliato; corolla tubiforme, tubo 7 mm. longo, lobis 2 mm. longis, lanceolatis; staminibus 4, filamentis 1.2 cm. longis, antheris sagittatis apiculatis, 3–4 mm. longis; ♀ : calyce 4-lobato, lobis 2–4 mm. longis, plerumque 2 quam reliquis brevioribus, sparsim ciliatis; corolla tubiforme, tubo 7 mm. longo,

lobis lanceolatis, 2 mm. longis, costa et apice sparsim ciliatis; staminibus nullis; stylis 2, 1.5–2 cm. longis, minute papillosis; baccis globosis, 6 mm. diametro.

NETHERLANDS NEW GUINEA: 5 km. east of Wilhelmina-top, *Brass* 9411, Aug. 1938, alt. 3650 m., matted on exposed rock-faces; 11 km. northeast of Wilhelmina-top, *Brass & Myer-Drees* 9817, Sept. 1938, alt. 3400 m., alpine grassland, dwarf shrub prostrate on sandy beaches of a stream; 7 km. northeast of Wilhelmina-top, *Brass & Myer-Drees* 9831 (TYPE), Sept. 1938, alt. 3560 m., pendent in great cushion-like masses on moist semi-shaded cliffs (fruit red, globose, soft, fleshy).

Coprosma Archboldiana appears to be related to *Coprosma ernodeoides* A. Gray and to the group of *Coprosma pumila* (*C. pumila* Hook. f., *C. nivalis* Oliver, *C. Petriei* Cheesem.). *Coprosma Archboldiana* differs from all of these in the definitely lobed calyx of the ♀ flower. The stipules are very short and some of the younger ones under a lens seem to be minutely denticulate. The calyx of the ♂ flower appears to have four teeth of unequal length, but in between these are minute denticulations which might possibly suggest that the calyx is a transitional form. The corollas of both ♂ and ♀ flowers are alike in size and shape in the New Guinean material. In the species mentioned above the corolla of the ♀ flower is always shown as the smaller in Oliver's monograph. Nevertheless it must be noted that the habit, the relative size of the leaves, the solitary terminal flowers, and the trumpet-shaped corolla all indicate a close relationship among these species.

Coprosma Brassii sp. nov. FIG. 11, B.

Frutex 1.5–2.5 m. altus, ramosus; ramulis ultimis plerumque ternatim verticillatis, obtuse 3-angulatis, patenti-hirtellis, pilis brevibus, internodiis 3–10 mm. longis, partim stipulis obtectis; foliis ternatim verticillatis, 1–1.7 cm. longis, 0.4–0.7 cm. latis, lanceolatis vel ovatis, rigide coriaceis, apice cuspidatis, basi in petiolo 1–2 mm. longo angustatis, utrinque glabris, margine minute papillosis vel erosulis; costa tantum manifesta, supra impressa subtus prominente; stipulis firmis extus glabris, circiter 2 mm. longis, in axillis supra folia breviter connatis, margine fimbriatis, processibus inaequalibus centrali longiore (2 mm. longo, 0.2 mm. lato), margine pubescentibus, pilis \pm densis 0.2 mm. longis; floribus sessilibus solitariis vel 4 ad apicem ramulorum; ♂ : calyce \pm turbinato, 4–6-dentato, dentibus circiter 2 mm. longis, acutis, minute ciliatis vel glabris; corolla campanulata, tubo 3–4 mm. longo, lobis ovatis aequilongis, recurvis vel patentibus; staminibus 4–6, exsertis, antheris 4 mm. longis, apiculatis; ♀ : calyce \pm turbinato, 4–6-dentato, dentibus 1.5 mm. longis, glabris; corolla campanulata, tubo 2–3 mm. longo, lobis circiter 3 mm. longis; staminibus partim inclusis vel inclusis, parvis; stylis 2, \pm 1.5 cm. longis, minute papillosis; baccis ellipsoideis, circiter 6 mm. longis (calyce persistente inclusis), 4 mm. diametro.

NETHERLANDS NEW GUINEA: 11 km. northeast of Wilhelmina-top, *Brass & Myer-Drees* 9807, 9809, Sept. 1938, alt. 3400 m., occasional in forest-edges (robust shrub 2 m. high; fruit red); 7 km. northeast of Wilhelmina-top, *Brass & Myer-Drees* 9842, 9843 (TYPE), Sept. 1938, alt. 3560 m., very abundant on forest-borders (large weak shrub of brownish appearance, 1.5–2.5 m. tall); 2 km. east of Wilhelmina-top, *Brass & Myer-Drees* 10221, 10304, Sept. 1938, alt. 3800 m., common in glades and forest-borders, sub-alpine forest (lax shrub 1.5–2 m. high).

This species seems to belong to the group of *Coprosma sundana*, according to Oliver's monograph. In nos. 9807 and 9809 the branchlets are nearly glabrous, but the collections do not seem to differ from the others in any other character. The dominant arrangement of both leaves and branchlets is ternate, although we have noted one node with only opposite leaves, also in another plant there is one verticil containing four rather than three branches. One flower of the type has three styles, but all others examined have two. The flowers are terminal and solitary or surrounded by three younger buds probably axillary at the next node, the internode between being so short as to give the appearance of four flowers clustered together. At the base of each flower is a whorl of reduced leaves and their stipules. The distinctive characters of the species are: the ternate arrangement of the leaves, their glabrousness, and under a lens the minutely eroded margin which appears as if it might have been papillate (possibly pubescent) or glandular; and the fimbriately margined stipules forming a very short sheath, the processes glabrous on the outside but the margin hairy (scarcely in a single line as cilia), the middle one being the longest of five or seven which extend from the margin of a single stipule.

Coprosma habbemensis sp. nov.

Frutex 3–5 m. altus, ramosus; ramulis minute hirtellis; internodiis 0.5–1.3 cm. longis; foliis oppositis, subcoriaceis, oblongis, 1.6–3.5 cm longis, 0.3–0.8 cm. latis, apice acutis et minute cuspidatis, basi in petiolo 1.5–3 mm. longo angustatis, margine ciliolatis, supra glabris, subtus costa sparsim patentihirtellis, nervis lateralibus obscuris vel interdum subtus manifestis utrinsecus 7–10; stipulis firmis triangularibus, 2–3 mm. longis, supra folia 1 mm. connatis, versus apicem margine glandulis 3 vel 4 dentatis, extus minute hirtellis, margine dense breviter ciliatis; floribus solitariis vel 2 vel 3 ad apicem ramulorum; ♂ : calyce 4(–6)-dentato, dentibus inaequalibus \pm 1 mm. longis, glabris, margine minute ciliatis; corolla campanulata, tubo \pm 2.5 mm. longo, lobis 4(–6), anguste ovatis aequilongis; staminibus 4 exsertis, antheris circiter 5 mm. longis, apice mucronulatis, basi sagittatis; ♀ : calyce ut in ♂; corolla campanulata, tubo \pm 2 mm. longo, lobis 3–4 mm. longis; staminibus parvis, filamentis brevissimis, antheris inclusis; stylis 2, circiter 1.5 cm. longis, minute papillois; baccis in sicco ellipsoideis, circiter 7 mm. longis et 5 mm. diametro.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass* 9367, Aug. 1938, alt. 3225 m., common in open parts of subalpine forest (tree or shrub 3–4 m. high); 9 km. northeast of Lake Habbema, *Brass* 10587 (TYPE), 10588, 10929, Oct. 1938, alt. 2800 m., abundant in forest second growths on landslips, native clearings, and openings (scrambling shrub 2–5 m. high; fruits orange in no. 10587, red in no. 10929).

This species is closely related to *Coprosma Wollastonii* Wernh. from the Carstensz Mountains; in fact, we have hesitated for some time whether to consider this a more pubescent form of *C. Wollastonii* or a distinct species. The peculiar combination of characters of Wernham's species (leaves scabrous above, midrib beneath clothed with scattered stiff hairs, hispid margin, glabrous stipules, glabrous branchlets), as well as the characters found in *C. novoguineensis*, have finally influenced us to believe that this is a distinct species. Apart from the size of the leaves, the longer hairs on the

midrib beneath, the more conspicuous stipules, and the much more open habit, *C. habbemensis* is very similar to *C. Lamiana* Oliver.

Coprosma novoguineensis sp. nov.

Frutex plerumque 1–1.5 m. altus, ramosissimus; ramulis ultimis brevibus, pubescentibus; internodiis brevissimis saepissime stipulis fere obtectis; foliis oppositis, in sicco rigide subcoriaceis, confertis, lanceolatis vel ovatis, 0.6–1.5(–2.2) cm. longis, 0.2–0.6 cm. latis (in specimine typico 0.6–0.8 × 0.2–0.3 cm.), apice cuspidatis, cuspidate 1–1.8 mm. longa, basi rotundatis vel obtusis deinde subabrupte in petiolo 0.5–1 mm. longo angustatis, utrinque glabris, costa supra impressa, subtus prominula, nervis lateralibus obscuris vel interdum sub lente utrinsecus 3 vel 4 inconspicue manifestis; stipulis firmis, obtuse ovatis, 2(–3) mm. longis, margine denticulatis (dentibus ± caducis) etiam dense pubescentibus, pilis 0.2 mm. longis, patentibus, ceterum glabris; floribus solitariis vel 2 vel 3 ad apicem ramulorum; ♂: calyce 4- vel 5-dentato, dentibus circiter 1 mm. longis, glabris vel in margine inferiore et inter dentes minute ciliatis; corolla campanulata, tubo 3 mm. longo, lobis 4 vel 5, anguste ovatis aequilongis; staminibus 4 vel 5, filamentis 6 mm. longis, antheris 4 mm. longis, mucronulatis; ♀: calyce et corolla ut in ♂; staminibus inclusis parvis; stylis 2, circiter 9 mm. longis, minute papillosis; baccis ellipsoideis, circiter 5 mm. longis et 3 mm. diametro.

NETHERLANDS NEW GUINEA: 11 km. northeast of Wilhelmina-top, *Brass & Myer-Drees* 9705, 9706, 9707, Sept. 1938, alt. 3400 m., grassy place (shrub 1.5 m. high; flowers brownish, the anthers somewhat violet; ripe fruits orange); 7 km. northeast of Wilhelmina-top, *Brass & Myer-Drees* 9933, Sept. 1938, alt. 3740 m., in edge of forest, not common (very slender sparsely foliated tree 3.5 m. high); same locality, *Brass & Myer-Drees* 9939 (TYPE), 9940, Sept. 1938, alt. 3900 m., plentiful on grassy summits (shrub 1 m. high; fruit red, fleshy); 2 km. east of Wilhelmina-top, *Brass & Myer-Drees* 10378, 10380, alt. 3700 and 3750 m., in marginal shrubberies of subalpine forest; Lake Habbema, *Brass* 9028, 9063, 9144, 9145, 13736A, Aug. 1938, alt. 3225 m., abundant in shrubberies bordering forest (loose straggling shrub 1.5–2.5 m. high).

The collections from Mount Wilhelmina are fairly uniform except for nos. 9933 and 9706. The first has leaves 1.5 × 0.5 cm., the second 1 × 0.6 cm.; apart from these two collections, the rest have leaves 0.6–0.9 × 0.2–0.4 cm. tending to dry very loosely folded along the midrib. All have very short internodes and are profusely branched, thus giving the impression of a compact habit. In the collections cited from Lake Habbema we can find no real differences. The glands or teeth along the margins of the stipules do not seem to have shrunk as much as in the Mount Wilhelmina material, and the specimens show both a compact and a loose habit; there is a wide variation in leaf-size, the two extremes being no. 9145 with leaves 1.3–2.2 × 0.2–0.5 cm., and no. 9028 with leaves 0.7 × 0.4 cm., the latter having very crowded nodes and the stipules also being short; in no. 9145, on the other hand, the nodes are 5–10 mm. long, and the stipules are also long. In practically all the collections the yellowish stipules are conspicuous. *Coprosma Lamiana* Oliver, collected at the base of Doorman-top, differs only in the longer pubescence of the branchlets, the dense pubescence of the stipules (on account of which there is practically no line of demarcation between stipules and branchlet at the base of the stipules), and the few short hairs on the midrib beneath.

Coelospermum Blume

Coelospermum reticulatum (F. v. Muell.) Benth. Fl. Austr. 3: 425. 1867; F. M. Bailey, Queensl. Fl. 3: 769. 1900.

Pogonolobus reticulatus F. v. Muell. Fragm. Phytogr. Austr. 1: 56. 1859.

BRITISH NEW GUINEA: Tarara, Wassi Kussa River, *Brass* 8565, December 1936, more or less gregarious on savanna-forest ridges (stiff erect shrub growing to 30–100 cm. from a somewhat fleshy rootstock; flowers white; leaves opposite and in 3's).

Previously reported from Queensland and North Australia.

Morinda Linnaeus

Morinda costata sp. nov. FIG. 1, A.

Planta scandens glabra; ramulis subteretibus, internodiis 2–7 cm. longis, novellis compressis; stipulis in vaginam brevissimam connatis, inconspicuis; foliis 6–11.5 cm. longis, 2.5–4.5 cm. latis, oblongo-lanceolatis, apice sensim acuminatis, acumine obtuso, basi rotundatis vel obtusis, interdum in petiolum angustatis, coriaceis, nervis lateralibus utrinsecus 5 vel 6 inter se remotis, patentibus versus marginem arcuatis et conjunctis, utrinque prominulis, subtus in axillis domatiiferis, reticulo laxo utrinque sub lente distincte manifesto; petiolo 6–12 mm. longo; inflorescentiis non visis; syncarpiis in ramis terminalibus sessilibus, oppositis, subglobosis, \pm 3.5 cm. diametro, 12–17-carpiis; baccis circiter 8 mm. ultra basim connatis; bacca singula circiter 1.5 cm. longa, parte superiore libera (circiter 1–1.3 cm. diametro), crassiuscula, irregulariter 4- vel 5-angulata, longitudinaliter sulcata, pyrenis 4 subosseis, oblongis vel obovatis, circiter 8 mm. longis, complanatis.

NETHERLANDS NEW GUINEA: 6 km. southwest of Bernhard Camp, Idenburg River, *Brass* 13012 (TYPE), Feb. 1939, alt. 1200 m., frequent in rain-forest (large canopy liane; fruit red, costate).

Morinda costata seems to be most like *M. Grayi* Seem., from Fiji, but the leaves have shorter petioles, and the syncarps are much larger and sessile in the New Guinean material. Among the New Guinean species *M. costata* is somewhat like *M. glomerata* (Blume) Miq., but in the latter the syncarps are short-pedunculate, the berries are smaller, and there is practically no thin calyx-margin, i. e. the entire wall is thickened around a cup-shaped opening about 5 mm. in diameter; in *M. costata*, on the other hand, there is a thin calyx-margin about 2 mm. wide projecting beyond the fleshy free costate part of the berry, leaving an opening at the apex about 3 mm. in diameter.

Morinda glomerata (Blume) Miq. Fl. Ind. Bat. 2: 247. 1857; Val. Nova Guin. Bot. 8: 515. 1911.

Sphaerophora glomerata Blume, Mus. Bot. Lugd.-Bat. 1: 179. 1850.

NETHERLANDS NEW GUINEA: Hollandia, *Brass* 9003, July 1938, large rain-forest liane. BRITISH NEW GUINEA: Budatobara, *Brass* 772, Dec. 1925, alt. about 90 m., liane in rain-forest. SOLOMON ISLANDS: Ysabel: Tasia, *Brass* 3273, Dec. 1932, large liane in lowland rain-forest.

These collections are all in fruit but seem to match the description fairly well; the species has been reported previously only from Netherlands New Guinea.

Morinda jasminoides A. Cunn. in Hook. Bot. Mag. 61: *t.* 3351. 1834; F. M. Bailey, Queensl. Fl. 3: 768. 1900.

NETHERLANDS NEW GUINEA: Angi, Arfak Mountains, *Kanehira & Hatusima* 13798, April 1940, alt. 1900 m., scandent in thicket by Iray, Lake Giji. BRITISH NEW GUINEA: Bella Vista, Central Division, *Brass* 5443, Nov. 1933, alt. 1450 m., in forest (small climber with cream-colored flowers on a globose receptacle; fruit orange-yellow, 1.2–1.3 cm. diameter).

The above cited material seems to be a very good match for the Australian collections of this species at hand.

Morinda salomoniensis Engl. Bot. Jahrb. 7: 478. 1886; Val. Bot. Jahrb. 61: 154. 1927.

NORTHEAST NEW GUINEA: Ogeramnang, *Clemens* 4835, Jan. 1937, alt. about 1750 m., forest-hills (vine; fruit red); Sarawaket, Camp Kilanda, *Clemens* 5236, alt. 2100 m. BRITISH NEW GUINEA: Mafulu, *Brass* 5187, Oct. 1933, alt. 1250 m., in tall forest (large liane with rigid branchlets; leaves very dark green; fruit red).

These collections all seem to agree with the description of *Morinda salomoniensis* Engl.; there is only one character shown here which is not mentioned in the original description: the corolla-tube as well as the throat is hairy within.

Morinda hirtella sp. nov.

Planta scandens; ramis hirtellis, brunnescentibus vel viridescentibus; internodiis novellis compressis, \pm angulatis; stipulis hirtellis, novellis probabiliter tubulatis cito uno latere fissis, 3–4 mm. longis, truncatis; foliis ellipticis, 4–10 cm. longis, 1.8–5.5 cm. latis, vel interdum oblongo-lanceolatis, 11×3.4 cm., tenuiter coriaceis, apice plerumque abrupte acuminatis, interdum obtusis cum acumine 3–10 mm. longo acuto, basi rotundatis vel novellis cuneatis, supra sparsim et breviter hirtellis, subtus (costa et nervis densius) non dense hirtellis, nervis lateralibus utrinsecus 7–9 oblique ascendentibus, supra manifestis, subtus prominulis, reticulo utrinque manifesto, subtus sub lente fere prominulo; petiolo 6–10 mm. longo, gracili, hirtello; inflorescentiis terminalibus, umbellatis vel subumbellatis; capitulis parvis \pm 9-floris, pedicellatis, pedicellis 11–20, gracilibus, \pm 1.5 cm. longis, hirtellis; floribus ut videtur unisexualibus; calyce cupuliformi, integro glabro; corolla extus puberula; tubo 1 mm. longo, lobis 3–5, circiter 4 mm. longis, oblongis, intus dense longe albo-barbatis, apice glabris; staminibus 3–5 tubo inter lobos insertis, filamentis brevibus, antheris 2.5 mm. longis dorso ad basim affixis; stylo non viso; disco prominente; capitulis fructiferis in sicco circiter 10 mm. diametro, 6–8 mm. altis; baccis in parte superiore vix liberis, pyrenis 3 vel 4 obovatis, dorso convexis, osseis.

NORTHEAST NEW GUINEA: Above Heldsbach, *Clemens* 1957, March 1936, alt. \pm 600 m., vine on roadside (fruit vivid orange). BRITISH NEW GUINEA: Lower Fly River, east bank opposite Sturt Island, *Brass* 7984 (TYPE), rain-forest, large canopy liane of the ridges (branches corrugated; flowers green).

This is another of the species with umbellate inflorescences, in some ways suggesting *Morinda mollis* A. Gray, of Polynesia, but with many more pedicels to the umbel and with glabrous calyces. With so little material we are unable to say whether the species always has unisexual flowers or not, but in the six flowers (taken from two heads in different umbels) examined we did not find even a rudimentary style; the corolla is mostly 4- or 5-lobed, but occasionally 3-lobed ones were observed.

Morinda micrantha Val. Bot. Jahrb. 61: 153. 1927.

BRITISH NEW GUINEA: Lake Daviumbu, Middle Fly River, *Brass* 7756, Sept. 1936, rain-forest substage liane (fruit-heads orange-yellow, less than 1 cm. diameter); Tarara, Wassi Kussa River, *Brass* 8505, 8675, Dec. 1936, Jan. 1937, large liane, common in rain-forests (flowers green; fruits orange-colored, 5–8 mm. diameter).

Described from Northeast New Guinea. The three cited collections indicate the variation in the species; the leaves vary from 5 to 11 cm. in length and 2–5.7 cm. in breadth, the leaf-tips in some instances with an acumen 1 cm. long, in others almost rounded with a mucro 2 mm. long; the umbels have 10–20 pedicels each bearing a 5–9-flowered head; the corolla-tube is about 1 mm., the lobes 2.5 mm. long.

Morinda oligocephala sp. nov.

Frutex scandens glaber; ramulis subteretibus; internodiis 2.5–5 cm. longis, novellis gracilibus; stipulis parvis, late ovatis, obtusis, caducis; foliis 5–10 cm. longis, 2–5 cm. latis, anguste ellipticis vel ovato-ellipticis, apice breviter acuminatis vel acutis, basi rotundato-cuneatis vel late obtusis, tenuiter coriaceis vel rigide chartaceis, nervis lateralibus utrinsecus 6–8 utrinque perspicuis patenti-adscendentibus, versus marginem arcuatis et confluentibus, subtus in axillis domatiiferis, reticulo laxo utrinque prominulo; petiolo 5–10 mm. longo, canaliculato; inflorescentiis umbellatis, terminalibus et interdum in axillis foliorum superiorum dispositis; capitulis 2- vel 3-floris, pedicellatis, pedicellis 4, circiter 5 mm. longis; calyce vix 0.5 mm. longo, minute 4- vel 5-dentato; corollae tubo 4 mm. longo, extus glabro, intus pubescente, lobis 4 vel 5, oblongis, 5 mm. longis, extus glabris, intus dense albo-barbatis; staminibus 4 vel 5 tubo inter lobos insertis, filamentis brevissimis, antheris subsessilibus, 2.5 mm. longis; stylo 7 mm. longo, stigmatibus 2, 3 mm. longis; vel filamentis 4 mm. longis, antheris 2.5 mm. longis, stylo 4 mm. longo, stigmatibus 3 mm. longis; capitulis fructiferis non visis.

BRITISH NEW GUINEA: Tarara, Wassi Kussa River, *Brass* 8490 (TYPE), Dec. 1936, underbrush of light rain-forest (climbing shrub; flowers cream-colored).

This species is readily distinguished by the rather prominently reticulate leaves, the predominantly 4-pedicelled umbels, and the few-flowered heads. The umbels are sessile, subtended by two leaves, but these sometimes have fallen, giving the impression at first glance of a pedunculate umbel.

Galium Linnaeus

Galium asperifolium Wall. Fl. Ind. 1: 381. 1820; van Steenis, Bull. Jard. Bot. Buitenz. III. 13: 247. 1934.

NETHERLANDS NEW GUINEA: Angi, Arfak Mountains, *Kanehira & Hatusima* 13666, April 1940, alt. 1900 m., in open wet grassy field on inundation-area of Iray River running to Lake Giji.

According to van Steenis the species is known from SE. Asia, Sumatra, Java, and the Philippines.

Galium innocuum Miq. Fl. Nederl. Ind. 2: 341. 1857; van Steenis, Bull. Jard. Bot. Buitenz. III. 13: 247. 1934.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass* 9286, Aug. 1938, alt. 3225 m., scrambling to 50 cm. on tall marsh grass, common.

Van Steenis gives the range of this species as the Philippines, the Moluc-

cas, Java, and Sumatra. This seems to be the first record of it from New Guinea.

Galium novoguineense Diels, Bot. Jahrb. 62: 493. 1929; van Steenis, Bull. Jard. Bot. Buitenz. III. 13: 247. 1934.

NETHERLANDS NEW GUINEA: Lake Habbema, *Brass* 9511, 9548, Aug. 1938, alt. 3225 m., occasional in moist forest-edges; 7 km. northeast of Wilhelmina-top, *Brass & Myer-Drees* 9859, Sept. 1938, alt. 3560 m., pendent on mossy trees in forest-edges, common.

Previously collected only in Northeast New Guinea (Sarawaket).

Galium australe DC. Prodr. 4: 608. 1830; Benth. Fl. Austr. 3: 446. 1867; F. M. Bailey, Queensl. Fl. 3: 782. 1900.

BRITISH NEW GUINEA: Murray Pass, Wharton Range, *Brass* 4730, Aug. 1933, alt. 2840 m., common on wet banks of a creek flowing through grassland. Australia.

Galium rotundifolium Linn. Sp. Pl. 108. 1753, sensu lato.

NETHERLANDS NEW GUINEA: 9 km. northeast of Lake Habbema, *Brass* 10731, Oct. 1938, alt. 2800 m., spreading and ascending herb massed on a native clearing in the forest. BRITISH NEW GUINEA: Murray Pass, Wharton Range, *Brass* 4736, 4945, Aug. 1933, alt. 2840 m., plentiful amongst coarse grass on banks of a grassland creek, also a few plants in a fern-brake on the edge of the forest.

Probably *Brass* 9321 from Lake Habbema is also a depauperate form. This is perhaps the same species which F. v. Mueller designated as *Galium javanicum* Miq. The whole complex is in need of careful study by a specialist of the group.

Galium subtrifidum Reinw. in Blume, Bijdr. 944. 1826; DC. Prodr. 4: 594. 1830.

NETHERLANDS NEW GUINEA: Bele River, 18 km. northeast of Lake Habbema, *Brass* 11423, Nov. 1938, alt. 2200 m., trailing and pendent to a meter [in length] on a dry face of limestone in the forest; Angi, Arfak Mountains, *Kanehira & Hatusima* 13590, 13820, April 1940, alt. 1900 m., in open marsh by Lake Gita, and in secondary forest at Iray. BRITISH NEW GUINEA: Murray Pass, Wharton Range, *Brass* 4946, Aug. 1933, alt. 2840 m., bank of an open grassland gully, rare.

The collections seems to be a good match for a Javanese collection so-named by van Steenis.

Galium bryoides sp. nov.

Planta perennis glabra; caulibus numerosis, ramosis, caespitosis, decumbentibus vel humifusis, probabiliter 7–10 cm. longis; ramis quadrangulatis, internodiis 1–5 mm. longis; foliis quaternis, sessilibus, lineari-lanceolatis 2.5–4 mm. longis, 0.4–0.8 mm. latis, apice attenuato-acuminatis et mucronulatis, basi leviter angustatis, margine planis, patentibus vel recurvatis, supra enerviis, subtus 1-nerviis, luce permeante laxe reticulato-venosis; floribus axillaribus solitariis, pedunculis sub anthesin subnullis, fructiferis usque 0.5 mm. longis; corolla rosea, 4-partita, lobis vix 1 mm. longis, ovatis; staminibus quam lobis brevioribus; stylis 2 distinctis, stigmate capitato; fructibus circiter 1 mm. longis, glabris et sub lente minute papillatis; embryo tantum leviter curvo.

BRITISH NEW GUINEA: Mount Albert Edward, southwestern slope, *Brass* 4416 (TYPE), July 1933, alt. 3680 m., several plants in a wet grassland hollow, rare (flowers pink).

This is a very distinct plant readily recognized by the glabrous character, the small and slender leaves, the matted habit, the very short peduncles, and the glabrous fruits.

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